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Canned-goods trade in  
the Far East

Place:

Washington, D.C.

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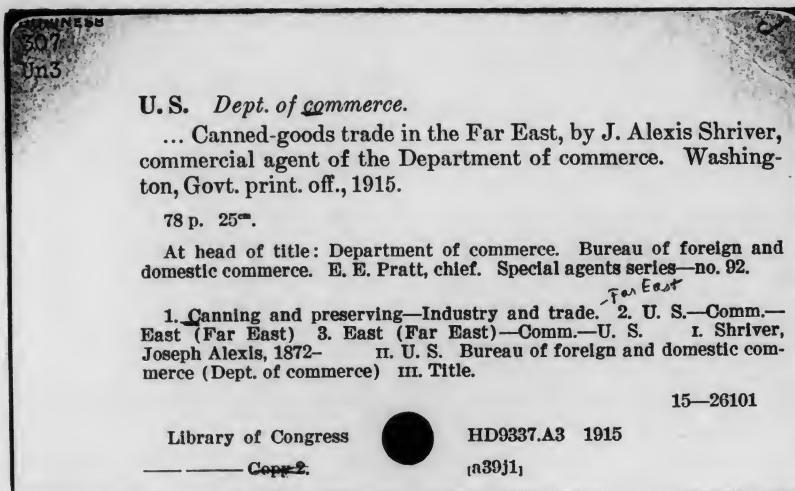
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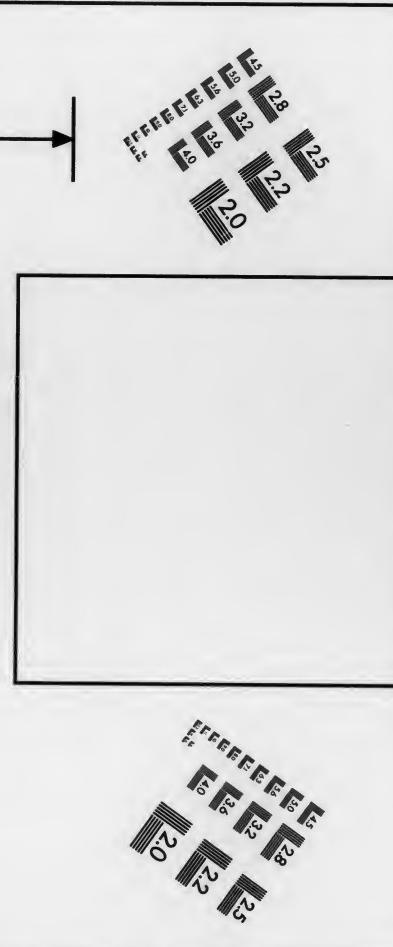
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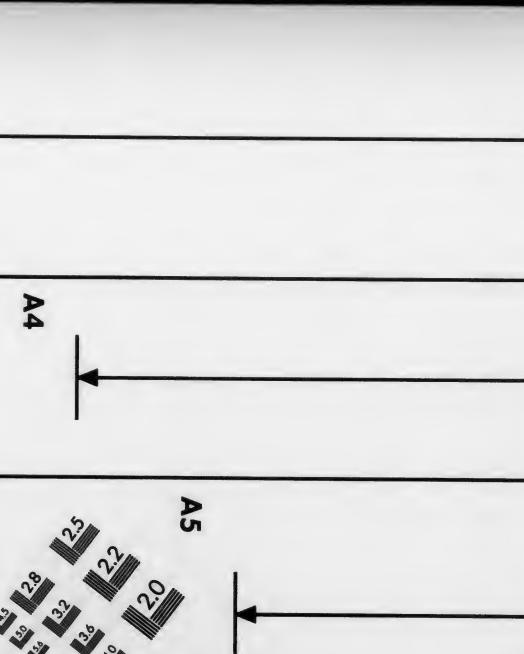
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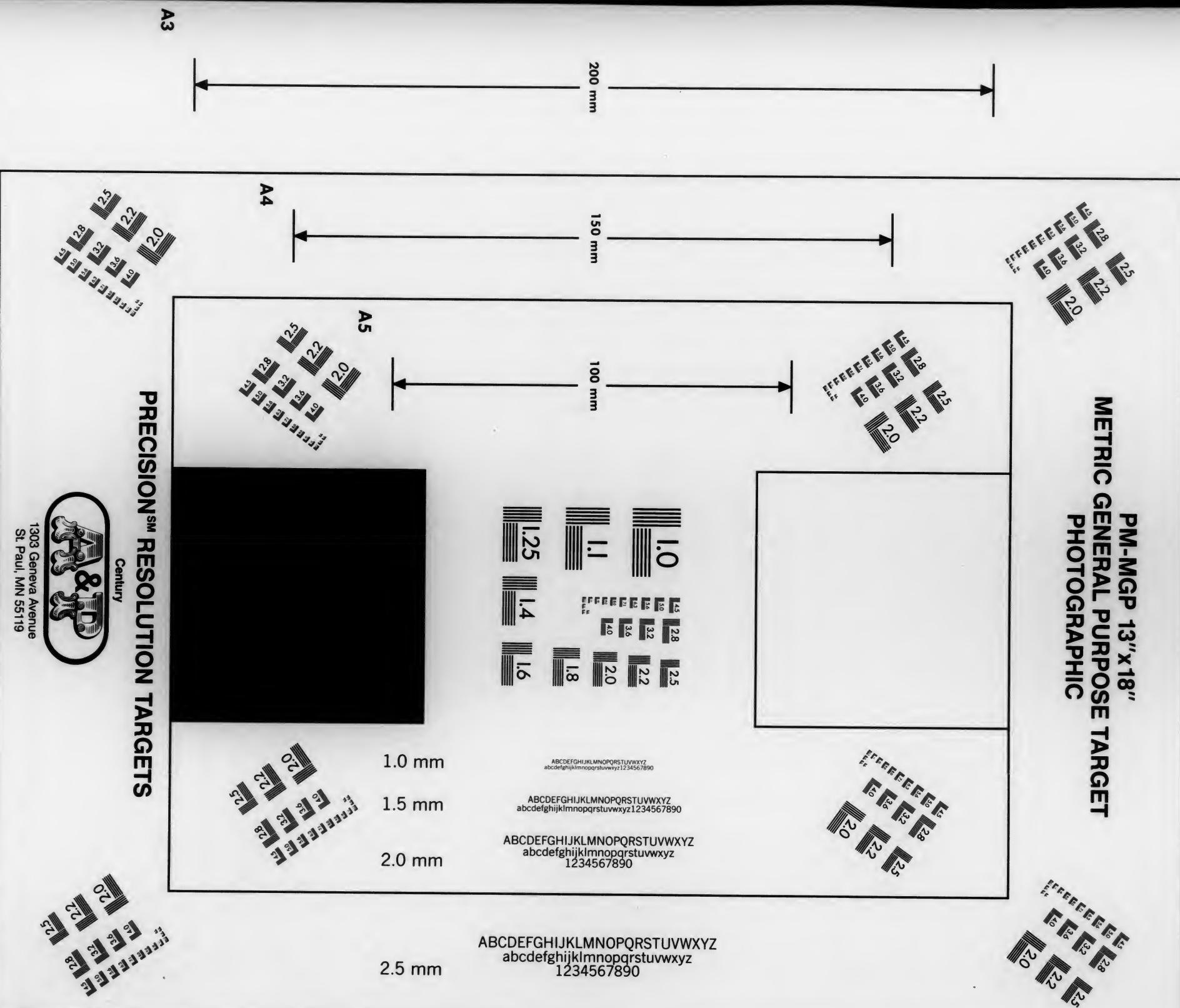
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E. E. PRATT, Chief

SPECIAL AGENTS SERIES—No. 92

# CANNED-GOODS TRADE IN THE FAR EAST

By

J. ALEXIS SHRIVER

Commercial Agent of the Department of Commerce



WASHINGTON  
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1915

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LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE,  
BUREAU OF FOREIGN AND DOMESTIC COMMERCE,  
*Washington, December 1, 1914.*

SIR: There is submitted herewith a report by Commercial Agent J. Alexis Shriver on the canned-goods trade of the Far East, with notes on the trade in Egypt and a report by Consul A. A. Williamson, of Tansui, Taiwan (Formosa), on the canned-banana industry of Taiwan. This monograph may be considered as supplementary to "Foreign Trade in Canned Goods," published as Special Consular Reports No. 54, and "South American Trade in Canned Goods," published as Special Agents Series No. 87.

Respectfully,

E. E. PRATT,  
*Chief of Bureau.*

To Hon. WILLIAM C. REDFIELD,  
*Secretary of Commerce.*

## CANNED-GOODS TRADE IN THE FAR EAST.

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### CHINA.

#### INTRODUCTION.

The early traders from Europe and America were obliged to confine their interchange of commodities with China to Canton, and it was not until 1842, as a result of the treaty of Nanking, that five such treaty ports were opened to foreign trade. The number of such cities has since been increased to 48, and the demand for a greater number is constantly being urged by foreigners. At some of these treaty ports, as at Shanghai, there are reserved areas not subject to Chinese authority, known as the international settlements, and in these the representatives of the various nations dwell under the jurisdiction of consuls from their own countries. This is known as "extraterritoriality" and is the outcome of the treaties between 17 different nations and China.

It can be seen from this statement that only a small portion of China is so far really open to foreign trade, but steady progress has been made in the last half century and we seem now to be on the threshold of changes that will create new trade difficult to measure.

Under present conditions what amounts to practically a 5 per cent tariff on imports and also on exports from the treaty ports constitutes the custom charges for entry of goods into a treaty port with the privilege of reshipment to other treaty ports without additional payment. By a further payment of one-half of the rate of the ad valorem tariff, that is, approximately  $2\frac{1}{2}$  per cent surtax, goods destined for interior points not treaty ports are exempt from the "likin," or local, tax. As yet this provision of the treaties is somewhat uncertain and goods destined for interior points may be held up at various points for the collection of this likin tax on goods moved through the interior, this tax corresponding to the "octroi" of European countries. Time and increasing trade will probably overcome this condition of affairs, however.

The American trade with China is carried on by the wholesale merchants who live in these treaty ports. The bulk of the wholesale trade in canned foods is handled by such merchants in Shanghai and Hongkong, who sell to the retail merchants in those cities and in other treaty ports. Practically no canned foods go beyond the treaty ports except to the missionaries, and these are usually purchased through the retail merchants in the treaty ports. The retail business in the treaty ports is carried on largely by English or French houses that are chiefly department stores carrying a large variety of commodities needed by the American and European elements in those treaty ports. In the more distant treaty ports this business is carried on by Parsees or Chinese retail merchants. The more

progressive of the wholesale merchants have foreign representatives in several of the more important treaty ports, such as Tientsin and Hankow, and in addition send a member of the firm or a representative from Shanghai to most of the other treaty ports once or even twice a year to take orders, in some cases making direct shipments of goods from America to fill such orders. Orders by mail are received and filled in the interim.

Not more than two of the wholesale merchants confine their activities to the sale of foodstuffs and in these cases not alone to canned foods. The present demand for canned foods in China apparently is not sufficiently large to encourage importers so engaged to limit their imports to one line of goods. The fact is that canned foods of some description are handled to some extent by nearly all of the large importing houses, but these larger importing houses represent manufacturers from nearly every country in practically every line of goods. The oldest and most important houses in the import business also act as steamship agents and even have steamship lines of their own, so that with such a variety of calls upon their time the sales, particularly of canned foods, are limited to the natural demand for such articles and practically no attention is or can be given to any real exploitation of any particular line of goods, especially goods on which there is a small margin of profit or danger of loss through change in price.

#### PRESENT NATURAL DEMAND FOR CANNED FOODS.

By natural demand for canned goods is meant that demand that has not been created by any real efforts in the way of exploitation. The use of canned foods is limited practically to the foreign element in China. According to the returns of the Chinese Maritime Customs for 1911, the foreign population was 155,778, distributed as follows:

Nationality.	Firms.	Persons.	Nationality.	Firms.	Persons.
American.....	111	3,470	Japanese.....	1,283	78,306
Austro-Hungary.....	26	385	Korean.....	46	2,256
Belgian.....	17	291	Norwegian.....	8	246
Brazilian.....	2	22	Portuguese.....	57	3,224
British.....	608	10,256	Russian.....	313	51,221
Danish.....	9	295	Spanish.....	6	288
Dutch.....	15	192	Swedish.....	1	150
French.....	112	1,925	Non-treaty powers.....	4	93
German.....	258	2,758	Total.....	2,909	155,778
Hungarian.....	3	26			
Italian.....	32	424			

The Japanese comprise about half of this foreign population, leaving only some 75,000 persons to whom considerable amounts of canned goods are sold, and even of this number over 51,000 are Russians, with whom only an insignificant business in American goods can be done.

The canned-goods exports from the United States to China and Hongkong are as follows, although it should be borne in mind that Hongkong is a distributing point for the Far East and goods entering there are often reshipped to other points and do not go into China itself:

Articles.	1908	1909	1910	1911	1912	1913	1914
<b>Fish:</b>							
Salmon—							
China.....	\$2,154	\$4,887	\$2,688	\$2,867	\$4,340	\$6,760	\$3,980
Hongkong.....	13,367	9,707	12,234	7,362	17,115	49,360	17,219
Canned fish, other than salmon or shadfish—							
China.....	479	984	764	1,239	1,509	1,481	1,881
Hongkong.....	979	745	162	139	1,188	256	1,305
Oysters—							
China.....	942	917	73	397	674	744	1,576
Hongkong.....	493	555	348	102	105	122	43
Shellfish, all other—							
China.....	360	311	289	265	415	544	1,515
Hongkong.....	1,430	11,629	13,046	10,199	10,379	19,831	4,311
All other fish and fish products—							
China.....	108	96	883	887	461	490	677
Hongkong.....	28,129	28,129	42,856	9,337	1,539	3,448	1,305
<b>Fruit:</b>							
Dried apples—							
China.....	969	1,494	2,207	2,282	2,761	2,678	3,056
Hongkong.....	1,161	1,187	1,273	1,371	1,097	1,345	970
Green or ripe apples—							
China.....	7,846	7,855	5,154	6,900	6,388	10,211	11,375
Hongkong.....	6,193	12,291	11,621	11,955	13,185	16,812	19,356
Dried apricots—							
China.....	388	345	503	740	1,297	2,569	1,732
Hongkong.....	140	194	481	418	638	801	1,528
Dried peaches—							
China.....	88	134	166	325	445	1,144	455
Hongkong.....	23	6	52	23	132	157	74
Prunes—							
China.....	3,329	3,448	2,980	4,525	4,788	7,464	6,168
Hongkong.....	1,233	1,468	1,166	1,837	2,132	1,954	1,271
Raisins—							
China.....	1,894	1,837	1,746	2,520	3,351	4,393	5,900
Hongkong.....	1,388	1,483	2,807	1,563	3,998	4,309	2,087
Fruits, all other green, ripe, or dried—							
China.....	12,098	10,783	11,541	9,659	14,125	4,041	3,442
Hongkong.....	4,181	2,551	1,414	1,382	1,894	818	603
Canned fruits—							
China.....	24,689	20,806	15,183	13,933	23,973	22,709	24,000
Hongkong.....	9,313	6,971	7,343	8,915	11,873	13,700	4,690
Fruits prepared or preserved, all other—							
China.....	1,545	376	412	219	680	1,760	3,007
Hongkong.....	101	83	167	74	217	204	735
<b>Honey:</b>							
China.....	810	907	633	849	1,406	1,748	2,344
Hongkong.....	300	84	334	238	442	317	365
<b>Meat:</b>							
Canned beef—							
China.....	2,191	3,024	790	2,167	1,663	149	439
Hongkong.....	3,542	2,831	2,253	884	5,844	67	54
Canned pork—							
China.....	770	771	2,731	155	157	1,578	46
Hongkong.....	916	406	810	3,654	3,727	-----	-----
All other canned meat products—							
China.....	6,675	4,104	9,627	8,918	11,141	19,364	23,981
Hongkong.....	6,734	6,732	12,967	8,616	9,690	9,572	5,397
Butter:							
China.....	1,319	522	251	254	168	83	577
Hongkong.....	35	43			180	10	-----
Cheese:							
China.....	13,842	12,420	12,031	9,310	13,668	15,823	13,340
Hongkong.....	18,397	17,006	17,022	12,994	17,014	14,579	14,200
Condensed milk:							
China.....	87,034	57,294	23,734	27,354	94,014	91,211	91,890
Hongkong.....	39,145	22,343	1,218	5,435	13,203	13,083	8,731
Syrups:							
China.....	202	714	248	319	485	613	572
Hongkong.....	128	64	54	173	90	226	36
Vegetables, canned:							
China.....	21,232	13,708	14,102	17,477	21,164	28,468	38,505
Hongkong.....	32	8,029	10,092	9,406	12,959	11,907	5,623
All other, including pickles and sauces:							
China.....	12,450	4,116	3,314	3,501	8,042	11,467	10,497
Hongkong.....	2,752	2,752	1,577	2,794	2,569	2,705	764
Total:							
China.....	203,414	151,653	112,050	117,062	217,115	237,492	250,935
Hongkong.....	139,196	137,799	140,898	96,017	131,142	169,310	81,667
China and Hongkong.....	342,610	289,452	252,948	213,079	348,257	406,802	332,602

This gives an average of \$362,554 per annum for the last three years, which, assuming that there is a foreign consuming population of 24,000, excluding the Japanese and Russians, would make a per capita expenditure of little more than \$15 for American canned foods and fresh dried fruit, butter, bacon, lard, and sirup—surely a small amount.

The statistics of the Chinese Maritime Customs are not so arranged that any satisfactory comparison can be made with the total imports of such goods or of the canned foods imported into China from other countries, but as a matter of course foreigners in China demand the products of their native countries. This is evident from the quantities of French, English, and Italian canned foods found in the retail grocery stocks of the stores of the principal treaty ports. The figures do not indicate that any quantity of canned foods are bought by the Chinese themselves. Personal observation and inquiries confirmed the impression that canned foods are not sold to many of the native Chinese, yet that there is some demand for certain kinds of American canned foods was evident among those Chinese (about 500,000 in number) who have taken up residence in the international settlement of Shanghai. Although those sections of the international settlement of Shanghai occupied entirely by Chinese furnish ample evidence of the retention of most of the Chinese customs, yet it is noticeable that many western customs have crept in, and in matters of food there is a tendency to adopt western dishes that indicates that progress in this direction could be made if American methods of advertising and exploitation could be used.

#### RESTAURANT LIFE IN CHINA.

The restaurant is one of the most familiar sights in China. The simplest form consists of two stands suspended from the extremities of a bamboo carrying pole slung across the shoulder of a half-naked coolie and moved about from customer to customer, always ready and much patronized. One stand contains a small charcoal fire. Next comes the temporary restaurant set up al fresco, with more or less permanent rough board tables and benches. These are sometimes provided with awnings or huge umbrellas and are patronized by the coolie class. Coolie cooks are employed. Next above this type comes the permanent open-front restaurant occupying the ground floor of a house on some important Chinese thoroughfare. The stoves or open hearths, with the pots or other cooking utensils, are usually on the street front, attracting the Chinese by the odors of frying foods. The dark interiors of these restaurants are fitted with tables and benches, and the cook-waiters, or in the better class of such restaurants the waiters, serve the meals to an ever-present crowd. The Chinese restaurant par excellence, however, is much superior to any of the above. It is a large two-story building with a carved or highly ornamented front and well calculated to attract attention. The ground floor is occupied by the kitchens, as a rule in full view, and possibly by a store for the sale of food. A broad stairway, usually covered entirely with beaten brass plates, leads to the second story, an arrangement not unfamiliar to those who patronize the Chinese "chop-suey" restaurants in the larger American cities. The narrow balcony along the entire front of these second-story restaurants is crowded during the busy hours.

The Chinese entertain at these restaurants, not at home. Dinner parties are frequently given, and the dinners are often of great length, running up to as many as 40 to 60 different courses. The restaurants are primarily for men, although it is not unusual in the high-class restaurants of the international settlement of Shanghai to see entire Chinese families dining together on the porticos. This, however, is the result of foreign influence among the wealthy Chinese who have gathered in Shanghai and who have adopted many western customs; it is not sanctioned by the Chinese generally. In fact, it is the rule throughout China that the women remain at home, and although the men dine out more frequently than at home, the women and children of the family remain in their "compound" and prepare their own meals. At the restaurants, the cooks and other attendants are always men.

The dishes served at the better-class restaurants are usually unfamiliar to the American. Shark fins, bird's-nest soup, pigeon eggs, bamboo shoots, abalone, duck with orange peel, melon seeds, preserved eggs, lychees, caramboles, and a long list of others seem more or less strange, and yet the majority of the dishes are relished by those foreigners who can overcome their prejudices, and many of the combinations of foods and sauces are exceedingly palatable. The desire for great variety is the feature that may lead to a more extended use of American canned foods in the restaurants. Already peas and asparagus have been introduced and are much liked. A favorite dish is a mixture of small shrimps and peas—an exceedingly tasty preparation. If American methods of advertising could be employed to induce the proprietors to use a number of American canned products on their menus or as ingredients in some of their dishes, an extensive trade might be established in certain lines. Canned corn and tomatoes might have such an outlet. The former could be eaten as easily with chopsticks as peas, while tomatoes could be used in sauces and as an ingredient in many dishes. Salmon has already had some sale, and judging from the avidity with which it is bought by the Chinese coolies on the rubber estates on the Malay Peninsula, it should have a much larger sale in China proper.

The Chinese eat with chopsticks and also with their fingers when necessary, and a small flat porcelain spoon is always to be found at each place at a Chinese table. The courses are served in a plate placed in the middle of the table, from which each person helps himself. Frequently the host picks over the contents of the dish to find the daintiest morsel, which he offers to his guest as a mark of politeness. The method of serving meals differs greatly from that of the Japanese, the use of tables and chairs being universal in China. The food also differs greatly from the Japanese, for although chopsticks are used and the food is cut up so that it can be handled easily, there is a wide difference in the general character of the food and its preparation.

#### METHODS OF AN ENGLISH COMPANY.

That western foods may be introduced by means of these restaurants and the various tea houses is being amply demonstrated by the Anglo-Swiss Condensed Milk Co., an English corporation. This company, by establishing its own branch office and force in Hong-kong, with plans to establish similar branches in other large treaty

ports in China, has begun a campaign to familiarize the Chinese with the use of milk. In Canton, Swatow, and other southern cities the company has been introducing condensed milk through these same restaurants and tea houses. In the warmer sections of southern China they have been demonstrating successfully the refreshing qualities of ice cream made from condensed milk. They have also shown the advantages of cooking with milk and have even attempted to introduce the hitherto unknown custom of taking milk with tea. The force in Hongkong has opened a branch store in Canton where supplies are always available and from which a vigorous campaign of education is being carried on throughout that section of southern China. Small boats make excursions up the rivers and canals distributing literature in Chinese, little souvenirs, and even miniature cans of milk with full directions for use in Chinese characters. Advertising matter is posted now in many parts of China, more particularly along the railroads.

The company's main office in Hongkong, in one of the best office buildings in the city, consists of four large rooms, and the office force comprises about 10 men, including the Chinese shroffs and interpreters. In one of these rooms there is a large showcase containing the different brands of milk in attractive form. Here the Chinese are afforded a "look see" and supplied with information, as well as such souvenirs as fans, rulers, and even clocks bearing an advertisement of the company.

#### THE SOLE-AGENCY QUESTION.

It has been shown that the present market for American canned foods in China depends largely on the natural demand by the small number of foreigners and that the sale of such goods to Chinese themselves has not been seriously attempted. This condition of affairs can be accounted for to some extent by the fact that the importers selling canned foods in China have no special inducement to attempt such exploitation even if they are financially able to do so. American firms have not always been willing to enter into a contract for a period of years with any one commission agent for a sole agency, whereas many European houses do make these long-period contracts. The sole agency has its advantages and disadvantages. The agent asks himself why he should endeavor to push an article unless he has a sole agency assured for a number of years. Unless he has a sole agency, he argues, any of his competitors can buy the same article, and if they wish can so change the market that his profits may be materially lessened or even turned into a loss. Unless he can control the market price he is never sure of a profit or at least the percentage of profit necessary in order to do business in the East. Hence he decides that goods are not worth pushing unless he has control of the market for a sufficient number of years to justify his efforts in introducing them. Otherwise it is best for him to accept such orders as come in and on which he is sure of his profit.

On the other hand the manufacturer may run a great risk in contracting for a long-term sole agency with a firm that for some reason does not or can not push his goods properly; and if he is not well acquainted with his agents he may find himself tied up with some one more interested in keeping him off the market than in developing his

trade. To guard against such contingencies, therefore, the manufacturer frequently endeavors to fix the minimum amount to be taken by the agent each year, and in some cases (principally in the case of English manufacturers) offers a bonus on a sliding scale when the whole year's business exceeds the certain fixed amount.

The greatest difficulty arises in such cases as the following: An American firm of canned-food manufacturers will appoint an agent, say, in Shanghai, to sell goods throughout China. This agent will have a branch office in Hongkong or will appoint a subagent for that city to represent him in southern China, and will send his representative or go himself to Hankow, Tientsin, and other important treaty ports to take orders and sometimes to appoint subagents. After working for possibly a year, during which time he builds up a trade for that particular line of goods or brand and establishes the name and quality of the goods on the market, he is surprised to find that one of his customers has purchased from another source the very goods he is handling. In some cases these goods are sold at a lower price than the original agent can afford to sell them. This underselling may come about in two ways:

The goods may be purchased directly by a competitive importer who desires to obtain the agency for this brand of goods and who undersells the original agent to obtain that agent's trade and also to show the American manufacturer his ability to make greater sales than the original agent. Of course, such a condition of affairs is easily possible where the American manufacturer is willing to receive orders from any one in China rather than depend wholly upon the original agent. The shortsightedness of such a course is obvious, yet the writer found several cases of this very character. The original agent falls short in his sales, may even have goods en route on which he will make less than his regular commission, and, becoming disgusted at the lack of protection given him, accepts only such orders as come to him unsolicited. The agency is transferred to the competitor, who undersold him with that end in view.

Underselling may come about in another way. The manufacturer may give a sole agency for China to some one, as in the foregoing case, and yet this sole agent will find the goods of this manufacturer coming on the Chinese market in competition with himself. Inquiry brings forth the fact that these goods have been purchased through some San Francisco or New York house, although the manufacturer states that he has no knowledge of selling such goods to San Francisco or New York houses for export to China, and claims that he is not in a position to protect the agent against such competition. The outcome of this, as in the other case, is a change of agents, and eventually another change as soon as a new importer undermines the trade of the second agent.

The writer found one well-known American canned food in Hongkong that had been handled by so many agents that the only one who cared to handle the line was a Chinese merchant. As there is competition from England in this line of canned food, and an active agent well protected by the English manufacturers, the American article has only a slight chance of remaining on the market at all. Direct dealing with the Chinese merchants in the treaty ports who cater to the trade of the missionaries and other foreigners is not regarded favorably by the foreign merchants in the treaty ports for

the reason that a Chinaman can afford to sell goods at 15 to 20 cents profit per case, as he can live on a very small profit, whereas the foreign merchant claims that it is necessary to make 5 or even 10 per cent profit. Some merchants acting as agents state that they never handle goods unless they can control the market in such a manner that the Chinese retail grocers are forced to purchase the goods at a figure sufficiently high to enable the foreign grocer to get the business.

The English canned-food concerns seem to take the view that the appointment of a sole agent under a long-term contract is the most satisfactory plan. One English firm doing a large canned-food business in the Far East offers a five-year contract and a sole agency, allowing the agent the commission on any goods sold in his territory, accepting direct orders but allowing him a commission on them, and so controlling the sale at home that goods can not be bought there for shipment to China without the firm's knowledge. The agent is allowed 60 to 90 days' credit on the goods, by which means he can extend credit to some of his clients in China.

This question of sole agencies has, of course, two sides. The American manufacturer hesitates to tie up for a long period with an agent of whom he knows little; in fact, a trip to China is almost a necessity if a thoroughly satisfactory understanding is to be reached. Unless the prospective business is large, the manufacturer usually decides that he can not afford to spend the time and money necessary for such a trip.

#### SUCCESSFUL AMERICAN METHODS.

The total area of China is estimated at 4,278,352 square miles. (The area of the United States and Alaska is 3,571,492 square miles.) A census of the kind taken in western nations has never been attempted in China, and the nearest approach to a reliable estimate is probably the census of households (not individuals) taken by the Chinese Ministry of Interior in 1910. Assuming 5.5 persons to a household, which, by a test census in various parts of the country was found to be a fair average, the population totals 331,000,000, including 1,500,000 as the probable population of Tibet. (Population of the United States and Alaska was 93,402,151 in 1910.) This vast country is as yet largely unknown to the outside world, but the changes that have been taking place during the last 10 years have been marvelous, and the proposed means of communication, together with the railways already opened, will bring about much greater changes. In the end trade with the West will be established throughout the country. This will not come about suddenly, but when the prejudices are overcome the little trade now carried on with the present treaty ports will seem as trifling as the limited amount of trade done in the early days of the "factories" in Canton.

Bearing in mind the area, population, and the prejudices to be overcome, it will be easier to comprehend the very remarkable progress made of three great American firms doing business in China—the Standard Oil Co., the British-American Tobacco Co., and the Singer Sewing Machine Co. At the outset these companies entered the Chinese field by means of the agency system. It soon became evident that the business did not grow, and investigations by capable

representatives of each firm convinced them that there was a broader field in China than could be had through the agents in the treaty ports, who were busy with a hundred different lines of goods and who usually lacked the capital and trained force necessary to reach out after the real Chinese business. They found the "compredor" system, and they decided to go beyond it. A description of this system is necessary to show how it limits the extension of sales to the native Chinese.

Americans, Englishmen, and Germans going to China to establish import and export business find at the outset a barrier to intercourse with the natives in the language and in the customs of the country. The foreigner may know his own business and the people he represents at home, but he does not know how to transact business with the Chinese or even how to converse with them. To overcome this difficulty the compredor came into existence. He is a Chinaman, speaking what is known as "pidgin" English (corruption of "business" English), a strange mixture of English with Chinese accent, Portuguese, and Chinese, and the principal means of communication between foreigners and the commercial Chinese. The compredor is usually a man of good financial standing who handles business with other Chinamen, and he is to some extent in partnership with the foreign import and export merchant. All sales to Chinese are referred to him. He passes upon their credit, makes the sales, collects the money, and simply accounts to the foreign partner, who knows little or nothing of the Chinese end of the business, just as the compredor knows nothing of the American or European end of the business. In fact, each keeps a separate set of books and the compredor often employs his own shroffs, clerks, and salesmen. In one office it was explained that the shroff would spend an afternoon at a tea house or restaurant, meeting there the Chinese with whom he expected to transact business, and generally returning with orders to his superior, the compredor, for approval. Usually this approval guarantees payment. The shortcoming of this system is that the extension is left entirely to the Chinese. It can hardly be expected that natives who have never lived outside the sphere of Chinese conservatism would possess that push and energy in developing business that has brought success to the American at home and abroad.

Realizing this state of affairs, the Standard Oil Co., the British-American Tobacco Co., and the Singer Sewing Machine Co. have each in turn gone after the business of China in a manner that clearly demonstrates that by aggressive American push enormous sales can be made where the old methods had led to little business. The agency system was abandoned by each of these concerns in favor of their own organizations. The compredor was not wholly dispensed with, but the development of business was not left entirely to him. Each organization was at first small and results were not expected at once. It has taken over 10 years of patient work to prove the wisdom of slowly but surely establishing themselves in China.

These companies bring young men from America under a two or three year contract to learn the methods of conducting business in China. They are sent out to branch establishments at different points in China and by degrees the different treaty ports have thus become bases for the development of the large Provinces and areas surrounding them. When a new section of country is selected for development, an aggressive advertising and educational campaign is

started. The Standard Oil Co. makes gifts of small lamps and oil to demonstrate their advantages over the old vegetable-oil dip. The British-American Tobacco Co. uses advertising posters printed in Chinese characters, with some brand or trade-mark ("chop," as the Chinese term it) likely to appeal to the imagination of the Chinese. These are posted on walls where the natives are accustomed to find public notices and proclamations. The custom of spreading news by posters is not unfamiliar to Americans who have visited the Chinese settlements of certain American cities.

In addition to the advertising, there is a free distribution of cigarettes, with matches to light them. In some cases a procession headed by a brass band arouses the curiosity of the town and naturally inquiries are made as to this new article thus thrust upon their attention. A Chinese merchant of standing in such a town is given a stock of goods, for which he in turn deposits an amount of cash with the company as a guaranty; he is usually allowed interest on this deposit. He is by no means left to dispose of his stock alone. The representative of the company revisits the town and helps stimulate business and the use of cigarettes. After years of such work it is difficult to find a city in China in which cigarettes are not smoked, and smoked by all classes, even to the poorest coolies. No street vendor or small stand is without a stock of these now very popular luxuries of life. Camel caravans of cigarettes start from Kalgan on the Mongolian frontier and cross the Gobi Desert and even reach Tibet and Turkestan.

The Singer Sewing Machine Co. carries the educational features further than any of the others. It establishes schools in which the use of sewing machines is taught to those whose interest has been aroused. These schools are entirely in the hands of Chinese, the company furnishing the building and sometimes the Chinese teachers, on salary; at other times on a commission basis or merely in a supervisory and cooperative manner with a Chinaman, who himself owns the store and school, seeing the advantages to be gained from a business not left for him to develop alone. A small charge is made for lessons, and this charge is considered a sort of first payment on the machine, to be forfeited in case of failure to purchase. The sales in cities not on regular lines of travel are almost unbelievable in view of the low purchasing power of the Chinese and the ability of nearly every man, woman, or child in China to sew or embroider. Here is the evidence of what patience, hard work, and confidence will do. The writer was told that one purely Chinese city of over 100,000 inhabitants (and cities of this size are numerous), which was not on the map and the name of which was not known to foreign merchants in Shanghai or Hongkong, had been found by representatives of the Singer Sewing Machine Co. More machines have been sold in this city than in Hongkong itself.

The advertising matter used by the Singer Sewing Machine Co. merits remark. One of their small colored banners distributed for household decoration shows what careful attention has been given to the study of Chinese tastes. This banner, bearing Chinese characters only, has a series of portraits of men prominent in present-day Chinese life. The advertisement was designed by a prominent English firm in Shanghai and made in England. A similar banner made by the same firm for the Hamburg-American Steamship Co.

depicts features of purely Chinese life in attractive coloring. Such advertising appeals to the taste of the natives, and is well worth while. The Japanese recognize the value of advertising in China, and the "Jin Tan" patent-medicine sign and others similar in character are to be found throughout China. Colors play an important part in advertising in China and most of the successful firms give careful study to such apparently insignificant details. (See article on advertising in China in Daily Consular and Trade Report for June 2, 1914.)

#### CHINESE CANNING FACTORIES.

That the Chinese already appreciate and use canned foods is evident. Along the lines of the railways coolies sell not only cigarettes and sweetmeats, but such articles as canned pineapple and other goods put up in China suited to Chinese taste.

It is a distinct surprise to find a Chinese cannning establishment, organized and operated solely by Chinese, run in the up-to-date and efficient manner of the Tai Foong Canned Goods Co. (Ltd.), of Shanghai, China. Much has been written about the peculiarities of Chinese food and the impression has been created that anything and everything is eaten by the Chinese. There is some foundation for much that has been said, but there is another side to the subject. At the cannning establishment of the Tai Foong Canned Goods Co. at Shanghai little was found that could be criticized and there were some features that could well be copied by western canners.

#### THE TAI FOONG COMPANY.

The Tai Foong company has a capital of approximately \$75,000, American currency. It has been in existence for seven years and is owned and operated by progressive Chinese who live in the international settlement of Shanghai, where the factory is located. The managing director is Wong Pat Yue and the active manager at the factory is L. S. Chuck. The latter speaks English remarkably well, although he has never been out of China. He received his early training in the industry at the older cannning establishments of Canton. The successful development of the Tai Foong company seems to be due largely to his progressive spirit. He states that for the first four years the factory was run at a loss, but as a result of improvements in machinery and methods and the development of a sales department there has been a profit for the last three years. The net profit during the past season was 10 per cent, of which 3½ per cent was declared as the first dividend, and the remainder was put into improved machinery and extensions to plant.

The factory is located on Soochow Creek, at the outer edge of the residential district of the international settlement. The impression of substantial construction given by the arched brick gateway with its wrought-iron gates is not lessened upon entering and inspecting the factory buildings themselves. The main building is of brick, 60 by 30 feet, with a wing of the same material, 130 by 60 feet. It is a one-story structure with ample provision for light and ventilation. An addition to the main structure, 30 by 100 feet, was under construction in 1913. Along the water side of the buildings shade trees have been

planted to keep off the heat of the afternoon sun, while benches along the retaining wall of the creek afford a cool resting place for employees during meal hours or after work, for many of them live at the factory.

There is a second set of three buildings about 200 feet from the main factory buildings. They are of brick, stuccoed, are two stories in height, and contain storage room, sleeping and living quarters for the workmen, and the offices and apartments of the manager. Everything is astonishingly cleanly and comfortable; there are even iron beds, fitted with mosquito nets, and electric ceiling fans. Such features for Chinese workmen are very unusual. The offices are furnished in good taste, including a large directors' room, with the familiar long table and chairs made in European style.

In the factory itself one is impressed by the uniform cleanliness. Even the bare skin of the workmen (who in summer are not burdened with more than a pair of white trousers) seems cleaner than much of the greasy clothing found in establishments where white suits are not furnished or required. Electric lights are used throughout the building, and electric ceiling and portable fans are so arranged as to insure a good circulation of air. The floors are all cement and are frequently flushed; an ample supply of water from the city waterworks is available, supplemented by a tank on the top of the building and a large covered cistern. Many of the preparation tables have marble tops, and those with wooden tops are frequently scrubbed. The copper cooking caldrons, of German manufacture, are kept shining. The two processing retorts were made in Shanghai after German models.

The plant employs about 80 men regularly 365 days in the year (Sunday not being observed by the Chinese). A few women are employed occasionally. The men are used to all sorts of work, and it is unusual to find women doing the work that falls to the lot of western women; for example, all the cooks in restaurants, tea houses, and street cookshops are men, as are the room servants in hotels. There seems to be no class of work with which the Chinese man is not familiar; he even sews and embroiders, and his ability to do laundry work is well known to Americans. The average wage paid these men is about \$10 gold per month, with board, which the manager stated costs about \$2.50 gold per month per man.

There is a remarkable atmosphere of satisfaction and cheerfulness among the men, and although that is one of the prominent Chinese characteristics it must be remembered that the wages of these men and the treatment accorded them are decidedly above the standard in China. Many of the men must be expert in several lines of work and willing to go from one character of work to another, as occasion requires, yet they have steady employment and better than the usual conditions. It is possible to keep this force at work all the year by packing a great variety of products, by putting the men to work in the can-making department during the slack periods, and by using them in the biscuit department. In fact, about 18 of the 80 men employed are now kept at work in this new biscuit department. The activities of the factory are supplemented by a wholesale and retail store situated in Nanking Road, the principal business street of the international settlement of Shanghai, from which goods are distributed to all parts of China and to the Straits Settlements, the Philippines, and even to the United States.

## THE CANNING FACTORY.

The products of the canning factory include all sorts of fruits, vegetables, fish, and shellfish, and a great variety of meats, fowl, and game. Material is abundant and is delivered at the factory at very low prices, the country surrounding Shanghai and that along the great Yangtze River being among the most fertile sections of China, with a moderate climate and long growing seasons. The total output during 1912 was about 1,100,000 cans of all sorts, the principal products being meat, fowl, and fruits. There was a daily average pack of over 3,000 cans, and the capacity of the plant will be much increased when the new addition has been completed.

Only a few of the fruits packed are familiar to Americans—pears, plums, peaches, apricots, and apples. Among the purely Chinese fruits may be mentioned lychees, loquats, myricas, carambolas, rose apples, kumquats, ginger, bitter melon, and a number of others. Of the familiar fruits, the pears and the apricots are more nearly like the American products, although they are lacking in flavor and size and can not compare with the California fruits. The cans are smaller than usual in America, a 1-pound can being the standard size. The pears seemed entirely too hard, but it was explained by the manager that American pears were too soft for the Chinese palate; in his own words, the Chinese "like to chew what they eat." He cooks his fruit at a low temperature in order to retain as much of the hardness as possible. Fruits are put up in two styles—one with sirup and the other with a very light sirup or entirely without sirup. The receipt for sirup calls for 10 pounds of sugar to 100 pounds of water, although for very green fruit as much as 12 to 15 pounds of sugar are used.

After receipt at the factory the fruit is washed in hot water and then peeled and pitted if necessary. Desire was expressed to find machinery for this work as well as for other processes of canning and can making. So far all purchases have been made through the German representatives of a Berlin house, who, being on the ground at Shanghai, have kept in touch with the requirements. After peeling, the cans are filled by hand, sirup added, and cans capped. The processing is done in the closed steam retort at about 225° F. for 8 minutes. The cans are then vented, resoldered, and after a second processing for a slightly longer period at the same temperature are cooled either in cold water or in a cold-storage room installed for that purpose. This cold-storage plant is the usual ammonia apparatus of German manufacture.

One of the fruits not generally known in America, but which makes a rather attractive canned fruit, somewhat resembling the plum in appearance and flavor, is the loquat. Thirty thousand cans of this fruit were packed in 1912, the packing period lasting from three to four weeks, beginning about the middle of June. This fruit is found in many parts of China and is a favorite with the Chinese. The cost of raw material delivered at the factory is \$2 gold per 100 pounds for the best quality. The completed product sells at \$5.10 gold per case of 48 one-pound cans at the company's salesrooms in Shanghai.

The lychee is slightly smaller than the ordinary plum and as canned has a whitish transparent flesh, with a slightly acid yet insipid taste. Although a favorite with the Chinese, foreigners must acquire a taste for it.

The myricas are small round fruits, somewhat larger than a large strawberry, with a rough surface and a small pit. The flavor is not unlike that of the raspberry, and the berry and juice have a purplish tinge. Foreigners have difficulty in acquiring a taste for this fruit; in fact, few of the fresh and cooked fruits eaten by the Chinese are liked by the foreigners living in the East.

The meats, fowl, and game packed are largely put up in sauces or with vegetables, and many such preparations are very good. The price list on page 22 gives an idea of the great variety of products packed by this company. Nearly all the meat is put up packed in small (approximately 1-pound) cans, while the fowl is packed whole in oval cans large enough to hold whole fowl. The very best of the products of this character is the golden pheasant, which is really excellent in spite of the lard in which it is cooked. It is remarkable that the natural flavor of this delicious game has been retained to such a degree and that the appearance and texture should be so pleasing. This and other varieties of game, such as woodcock, snipe, quail, and rice birds are abundant and cheap in China.

The manager was particularly anxious to learn the proper method of packing these products to please the foreign palate. Golden pheasants cost 15 to 20 cents, American currency, each at the factory, and snipe and woodcock 5 to 10 cents. Last season 10,000 golden pheasants were packed at this factory, and a much larger number could have been put up had there been a demand outside of the Chinese market.

In processing fowl and game in the larger oval cans, a temperature of about 250° F. is maintained for 70 minutes for the first treatment; then, after venting and resoldering, a second processing follows at the same temperature for 20 minutes. For the smaller (1-pound) meat and game cans, the first processing is done at 240° F. for 40 minutes, and the second cooking, after venting, takes 20 minutes at the same temperature. The ducks put up with various sauces or vegetables are sold over a large area, many going to Singapore.

At the rear of the property are arranged large sheds in which the poultry is kept and fattened. A large brick-lined pond adjoins the duck sheds. Duck and goose livers, both whole and chopped, are also packed in special sauces and find quick sale.

The variety of fish canned is large, but not of particularly good quality. The abalone is much liked by both the Chinese and Japanese. A product of good flavor is the scallop in chicken sauce. The scallop is apparently similar to that found in America and the flavor is well preserved by the addition of the chicken sauce, which is in reality chicken broth. Crab meat is also canned, but not very successfully. The Chinese crab is similar to the American crab found along the Atlantic coast, and is not so large as the Japanese crab. No lacquer is used on the interior of the cans and there has been, therefore, much discoloration of the crab meat.

The most interesting of the fish products are sharks' fins, one of the best known of Chinese delicacies. One-pound cans sell for \$1.85 to \$1.10, American currency, per can retail, according to quality. This product has been packed by the Tai Foong Co. for three years. One thousand cans were packed the first year, and there has been an annual increase of 1,000 cans. There are good prospects of a still more rapid growth in the future as the people inland find that this

highly prized delicacy can be purchased in cans. The sale of canned shark fins indicates that there are some Chinese who can afford to purchase canned food when it suits their taste. The shark fin is a gelatinous substance requiring considerable preparation for the table. The first boiling alone requires 10 hours. As served by the Chinese it resembles tough strings of gelatin and has no very distinctive flavor. Foreigners can not understand the esteem in which this food is held by the Chinese.

#### CAN-MANUFACTURING DEPARTMENT.

All the cans used at the Tai Foong factory—1,100,000 a year—are made by the ordinary force at convenient times. The portion of the building given to this department is overcrowded and not so arranged as to save labor or time in handling. This space will be rearranged when the new building is completed, and the manager is desirous of purchasing as much automatic machinery as he can find. This should be an opportunity for the sale of some can-making machinery. Correspondence may be carried on in English with L. S. Chuck, in care of the Tai Foong Canned Goods Co. (Ltd.), 515 Nanking Road, Shanghai. The present machinery was furnished by a Berlin house through its Shanghai representative.

The electric motors, one 8 horsepower and one 10 horsepower, are rented from the Shanghai Electric Co. They are both of English manufacture. The power is transmitted through countershafting affixed to the ceiling, operating 18 machines in the can-making department and 3 machines in the biscuit department, as well as the lathe and small tools in the repair shop.

There is a separate machine for each step in making the cans, and there are few modern labor or time saving attachments. A catalogue of an improved American rubber-ring press was shown the manager and aroused great enthusiasm and a determination to improve on the slow method now used in the factory by the purchase of an American machine.

The machine shop adjacent to the can-making section contains a very complete outfit of German tools, including a lathe, drill, emery wheel, and other necessary tools. Cupboards around the room contain dies of all sorts in good order and carefully greased. All steel used in repairs or otherwise is purchased from Germany, as the steel to be had in Shanghai is said to be too soft. All tin used in the manufacture of cans is purchased in England at the following prices: Best quality No. 1 coke, per box of 112 sheets, 20 by 28, 200 pounds, delivered at Shanghai factory, \$9.25, American currency; a poorer quality of lighter tin, per box of 112 sheets, 14 by 20, 90 pounds, delivered at the factory at Shanghai, costs approximately \$3.

#### BISCUIT DEPARTMENT.

The biscuit department occupies three large rooms and the space required by the ovens. It has been in existence three years and in that short time has far outgrown the equipment with which it started. One thousand pounds of biscuits are manufactured daily, but as this does not meet the demand, a new and much larger oven is being constructed. After obtaining bids and plans from Germany the manager decided that the oven could be constructed at half the

estimated cost if Chinese iron made at Hankow and worked up in Shanghai were used. The original plans were used, but the work has been carried on without outside aid. It is an automatic oven, 45 by 10 feet and 20 feet high. It has two fire boxes at the base. The iron chimney, on which bids had been received from Germany, was also built under the supervision of the factory manager.

The biscuits are made in about 10 different sizes and are packed in tin boxes, round, square, and oblong, the most popular size being the round one-pound can, 5½ inches high and 4 inches in diameter. These boxes are lined with parchment paper and are neatly labeled. The flour used is half American and half Chinese. The butter used is Australian.

The machinery is German, and consists of a dough mixer, one cutting machine, and one rolling machine. These are all power-operated machines. The dough mixer is much too small and the company desires to replace it with a larger and more modern type.

#### STORE AND SALES DEPARTMENT.

The store and sales department, while not large, is well located and compares favorably with first-class grocery stores in western cities. The signs and window display are calculated to attract attention, and the arrangement of the shelves and show cases inside the store is effective. The clerks are, of course, all Chinese, but many of them speak English, and all are neat, attentive, and accommodating. That the foreign trade is catered to is evidenced by the use of English on the signs, labels, and price lists. The labels also bear an illustration of the product in each case, and each article is assigned a number, which is printed on the can and corresponds to the number on the price list.

There is a good retail trade in Shanghai and a rapidly increasing business with the Chinese restaurants, but the largest part of the trade is done with other parts of China and the Straits Settlements. This outside trade is handled at the Nanking Road office by Mr. Wong Pat Yue, the managing director, and his force of eight clerks. Wholesale prices are said to be 15 per cent less than the published retail list. Following is the price list published by this company; the spelling of the original has been retained, and the prices are based on the Mexican silver dollar, the value of which varies somewhat but may be reckoned here as 50 cents, American currency:

No.	Products.	Price per can, Mexi-can.	No.	Products.	Price per can, Mexi-can.
SHARK'S FINS.					
103	Shark's fins with chicken sauce (best quality).....	\$3.70	67	Duck (whole) with paste.....	\$0.85
1	Shark's fins with chicken sauce.....	3.00	70	Duck and onion (whole).....	.85
2	Shark's fins with chicken sauce.....	2.20	4	Duck and mushroom (whole).....	.85
CHICKEN.					
68	Chicken (whole) with paste.....	.85	8	Duck and orange peel (whole).....	.85
23	Curry chicken.....	.35	7	Duck and Peking cabbage (whole).....	.85
24	Chicken and chestnuts.....	.35	48	Duck and mushroom (half).....	.45
22	Chicken and mushroom.....	.35	57	Duck and Peking cabbage (half).....	.45
31	Chicken (hashed).....	.35	6	Duck and orange peel (half).....	.45
41	Roasted pheasant (large).....	1.00	9	Duck and chestnuts.....	.35
42	Roasted pheasant (small).....	.90	10	Duck and dried bamboo shoots.....	.35
47	Roasted woodcock.....	.60	44	Roasted wild duck.....	.80
				Roasted teal.....	.60

No.	Products.	Price per can, Mexi-can.	No.	Products.	Price per can, Mexi-can.
PORK.					
77	Bacon.....	\$0.25	83	Mushrooms.....	\$0.35
14	Pork and beancurd.....	.45	98	Almond powder.....	.20
58	Pig's feet.....	.30			
30	Pork (hashed).....	.25			
16	Roasted pork and oyster sauce.....	.35			
15	Roasted pork and shrimp paste.....	.35	33	BAMBOO SHOOTS.	
100	Roasted pork.....	.40	35	Bamboo shoots (fresh).....	.30
39	Spiced roasted pork.....	.30	32	Bamboo shoots (fresh).....	.25
			69	Bamboo shoots and shrimp eggs.....	.35
			85	Spring bamboo shoots.....	.25
				Roasted bamboo shoots.....	.30
FISH.					
106	Smoke fish.....	.38		FRUITS.	
107	Smoked eel.....	.45		Carambola.....	.20
101	Shad with sediment of liquored.....	.45	52	Lychees.....	.22
76	Pear with sediment of liquored.....	.40	51	Loquats.....	.25
74	Ningpo fish.....	.51	104	Pineapples.....	.18
75	Spiced fish.....	.35	54	Myricas.....	.18
36	Spiced baked fish, 1-lb. tin.....	.45	105	Shantung pears.....	.22
72	Spiced baked fish, 1-lb. tin.....	.25	102	Bitter melon.....	.17
50	Fried mandarin fish, 1-lb. tin.....	.35	55		
73	Fried mandarin fish, 1-lb. tin.....	.22			
71	Mackerel.....	.30			
66	Sciaena.....	.60			
62	Salt herring.....	.55	86	PRESERVED FRUITS.	
11	Fish (hashed).....	.30	87	Preserved green plum.....	.25
			88	Preserved loquats.....	.30
			89	Preserved kumquats.....	.25
			90	Preserved rose apples.....	.25
			91	Preserved ginger.....	.25
20	Mutton and mushroom.....	.35	91	Preserved green melon.....	.25
19	Stewed mutton.....	.35	92	Preserves (combination).....	.25
21	Sheep's head.....	.35		DRIED FRUITS.	
				Dried peaches.....	.25
61	Beef with sauce.....	.25	94	Dried apricots.....	.25
64	Curry beef.....	.30	95	Dried apples.....	.25
56	Oxtail soup.....	.25	96	Dried rose apples.....	.25
			97	Dried pears.....	.25
PIGEONS.					
26	Spiced pigeons.....	.45		SAUSAGE.	
25	Stewed pigeons.....	.45		Baked fine sausage.....	.53
			108	Baked pig's sausage.....	.50
			109	Baked tongue sausage.....	.50
			110	Baked sheep's sausage.....	.50
3	Awabi.....	.65	111	Corned ham sausage.....	.55
40	Spiced awabi.....	.35	112	Smoke ham sausage.....	.55
			113	Smoke ox sausage.....	.55
			114	Smoke tongue sausage.....	.55
28	Roasted turtle.....	.35	115	Smoke liver sausage.....	.50
27	Stewed turtle.....	.35	116	Smoke ox fine sausage.....	.50
			117	Smoke sheep's sausage.....	.50
RICE BIRDS.					
46	Fried rice birds.....	.50		BISCUITS.	
78	Spiced rice birds.....	.45		Cocoa nut biscuits, 1½-lb. tin.....	.55
				Cocoa nut biscuits, 2-lb. tin.....	.75
				Cocoa nut biscuits, 2½-lb. tin.....	1.00
HAM.					
29	Ham (hashed).....	.35		Chocolate biscuits, 1½-lb. tin.....	.50
60	Ham.....	.60		Chocolate biscuits, 2-lb. tin.....	.70
63	Ham (whole).....	.45		Chocolate biscuits, 2½-lb. tin.....	1.00
45	Fried mussels.....	.60		Almond biscuits, 1½-lb. tin.....	.50
99	Crab's flesh.....	.35		Almond biscuits, 2-lb. tin.....	.70
37	Spiced kidney and liver.....	.30		Almond biscuits, 2½-lb. tin.....	.90
13	Conpoy with chicken sauce.....	.40		Combination, 1-lb. tin.....	.20
12	Mushroom with chicken sauce.....	.35		Combination, 1½-lb. tin.....	.35
82	Mushroom, bamboo shoots, and cabage.....	.35		Fruits biscuits, 1-lb. tin.....	.45
				Fruits biscuits, 2-lb. tin.....	.80

\* Per pound.

The sale of the Tai Foong products in China need not necessarily injure the prospects of increasing the sales of American canned goods; in fact, it may result in broadening the field for canned goods of all kinds. Chinese stores handling canned goods always carry the American product as well as the Chinese.

With the exception of the canning factory at Amoy, China, which has been described in the report, "Pineapple-Canning Industry of the World" (Special Agent Series No. 91), no other Chinese canning factories approach this factory in modern methods. The one at Amoy has ample capital and has shown a desire to reach a high standard by sending to America for a superintendent. It will probably take an important place among the canning factories of China in the near future. The remaining Chinese canneries, of which the Sek Be Co., of Swatow, described more fully in the canned-pineapple report, is a fair example, are not of a character to inspire great confidence in the products put out by them. Combined, they will produce a considerable quantity of canned goods packed to suit Chinese tastes, and in this way a knowledge of canned foods in China will be widely spread.

#### IMPORTANCE OF ESTABLISHING AMERICAN BRANDS.

It is necessary for the American manufacturers of canned foods to realize the necessity of early establishing their "chops," or brands, in China. The Chinese attach great importance to the chop. They are conservative and do not readily desert a brand that has been tried and found satisfactory. No more striking example of this unwillingness to accept a new chop can be cited than the experience of a certain Shanghai importer. He had developed some sale for canned salmon among the Chinese and had sold a certain brand of American salmon. This brand had an ordinary label depicting a salmon with its tail turned up, and when the new shipment arrived with the labels showing a salmon with its tail turned down the Chinese refused to accept, saying "No belongee same kind fish." This experience emphasizes the absence of Chinese characters on American canned goods giving information as to the contents. It was perfectly natural for the Chinese to judge of the contents of the can by the only feature of the label that was intelligible to them, i. e., the picture of the salmon, and the change to a fish that was not the same as that on the label with which they were familiar was ample reason, viewed in this light, for the refusal of the shipment. Such matters as this are worthy of careful observation and study by the American manufacturer of canned foods. Such matters have not been neglected by the representatives of American manufacturers of other lines who have developed large sales for their goods in China.

#### SUGGESTIONS FOR DEVELOPING TRADE.

If a real Chinese business in canned foods is to be developed, American methods of exploitation seem an absolute necessity. An adequate organization, gradually increased to cover a territory larger than the United States, is as much a necessity in China as it would be in America, and at the head of such an organization should be a man of the highest caliber and thoroughly familiar with China and Chinese life. Results must not be expected immediately, but with a proper force in the field and an effective campaign of education, an immense business in canned foods throughout China can be built up in certain lines. Just what lines those are can not be determined without experiment; two are certainties—condensed milk and canned salmon.

Peas and asparagus should find a ready sale and experience and study will determine what additional lines can be developed. The unexpected often happens in trade. The demand in Jaya and the Malay Peninsula for canned muscat grapes from California is an example. There is practically no sale for such a product in the American market, and yet there is a good and growing demand for it in the countries mentioned. Similar opportunities no doubt exist in China.

No broker or manufacturer of canned goods in America would think of being without a sampling room. Goods to be sold are opened for the inspection of the purchaser. The Chinese are not different in desiring what they call a "look see." In matters concerning the sale of new products he should have more than a "look see." Show and sampling rooms are a necessary adjunct to increasing sales among the native classes, and the branches of such an organization as that suggested could easily establish such rooms. These branches could carry a small stock of goods upon which retailers could draw without waiting for shipment of goods from America.

That such an organization for the extension of American canned foods presents difficulties from the home end are evident. The canned-food business of America is divided among 3,168 manufacturers, and many are of the opinion that foreign export does not interest them. The majority of them are not prepared or individually justified in undertaking foreign export on a large scale, because it calls for steady supply, expert knowledge, and constant study. There are, however, several large manufacturers of canned foods in the United States who could enter this field along the lines suggested, although it would be better for all concerned if a cooperative plan could be devised by which all could take part.

#### CHOSEN (KOREA).

Since Korea was annexed by Japan it has naturally become year by year more Japanese. The large number of Japanese who have become residents of Chosen have had their influence upon the natives. The Koreans themselves are not progressive, and although the Japanese have made wonderful progress in the principal cities and along the railway, their influence has not been so pronounced in the smaller cities and the rural districts. The population is estimated at about 14,000,000, of which about 210,000 are Japanese. There are not more than 1,000 Americans and Europeans. The Americans are missionaries and persons interested in the gold mines of north Korea.

The statistics of exports of canned foods from the United States to Chosen given in the following table show the effect of the limited number of foreigners upon the sale of canned foods:

Articles.	1908	1909	1910	1911	1912	1913	1914
<b>Fish:</b>							
Salmon.....	\$126	\$266	\$220	\$208	\$223	\$1,011	\$266
Canned fish other than salmon or shellfish.....	146	425	187	136	538	386	194
Oysters.....		14	24		50	114	64
All other shellfish.....	14	33	48	29		117	30
All other fish and fish products.....	8	.....	17	.....	13	.....	.....

Articles.	1908	1909	1910	1911	1912	1913	1914
<b>Fruit:</b>							
Dried apples...	\$11	\$18	\$34	\$23	\$28	\$93	\$69
Dried apricots...	70	2	58	17	15	140	93
Dried peaches...		10	37	128	147	24	64
Prunes...	142	30	157	101	212	319	277
Raisins...	312	218	330	1,021	1,277	2,074	2,404
All other fruits, green, ripe, or dried...	543	358	483	322	426	272	468
Canned fruit...	3,129	2,212	2,049	1,692	5,157	3,865	3,187
All other fruits prepared or preserved...		48			59	216	378
<b>Honey:</b>							
		12	17			14	39
<b>Meat:</b>							
Canned beef...	59	51	196	35	282	292	146
Canned pork...				55	53	183	67
All other canned meat products...	944	670	730	912	1,228	1,911	1,433
<b>Butter:</b>							
2,815	2,796	788	173	107	102	170	
Cheese...	354	305	257	210	328	471	289
Condensed milk...	21,374	4,223	2,436	2,680	27,674	63,375	2,718
Sirup...	122	7	34	27	127	77	158
Canned vegetables...	7,646	1,444	2,773	1,366	2,571	3,760	3,861
All other, including pickles and sauces...	446	349	293	168	309	480	1,388

Seventy per cent of the trade of the country is with Japan and the prospects for the sale of American canned foods in Chosen are no brighter than in Japan. Any effort to increase sales should be made through connections already established in Japan for the exploitation of canned foods in that country. The two large retail Japanese groceries with headquarters in Tokyo—"Meidayo" and "Kameya"—have branch stores in Seoul and Antung, on the border of Chosen, and it is through these that American canned foods reach the consumers in Chosen. Prospects of sales among the natives do not seem so promising as among the natives of China. The Koreans are not so prosperous and the Japanese influence will increase year by year; consequently the use of American canned foods is not likely to increase unless some means is found to increase sales to the natives of Japan, who will carry with them the tastes so acquired.

#### MANCHURIA AND SIBERIA.

The sphere of Russian influence in Manchuria along the Trans-Siberian Railway centers at Harbin. Here the offices and a large force of Russians connected with the railway are located. As Harbin is the junction of the branch railway built by the Russians to Port Arthur, now in the hands of the Japanese below Changchun, it has become an important center. The extension of the railway lines below Mukden to Tientsin and Peking in China and also through Chosen to Fusan, giving through connections by water to Tsuruga, Japan, will continue to make Harbin a growing city.

The entire city built by the Russians is new and substantial, in great contrast to the native Chinese city. The inhabitants are practically all Russians. There are about 10 Americans, connected for the most part with the British-American Tobacco Co., the International Harvester Co., and one or two other concerns that realize the necessity of direct representation on the ground.

The canned foods sold in Manchuria are consumed principally by the Russians in the cities along the railways and at points along the Sungari River. Most of such foods are of Russian and French origin.

Several large Petrograd (St. Petersburg) houses have branch stores in Harbin and also in Vladivostok, and orders for these houses are placed through the main offices in Petrograd. In some cases they sell to the smaller retail houses managed by Chinese. Representatives of Russian and French firms have introduced their goods by means of traveling salesmen, and some American canned goods are sold by the agents in Shanghai, who occasionally make a trip through China and as far north as Harbin.

On account of the short growing season and the long winter, the demand for canned vegetables and fruits is greater than for other lines; milk also has a good sale. The transportation facilities from America are not satisfactory, and the closing of the ports of entry by freezing early in the winter calls for the advance stocking of goods for the entire winter. One merchant in Mukden complained bitterly of the treatment accorded him by one American firm with whom he had placed an order for his winter's supply, because the firm had shipped one-third at the time ordered and promised the remaining two-thirds within one or two months. The closing of the ports by freezing weather, however, prevented the delivery of the remainder of his order at the time it was needed. The trade in Harbin, as well as Vladivostok, which redistributes to Kamchatka and other points in Siberia, can not be handled from America direct. A representative from Shanghai or some other point can best direct the business with this section. Siberia has a heavy import duty on canned articles, except condensed milk, that practically prevents importation of most canned goods into this section. This is shown by the following list of exports from the United States to Siberia:

Articles.	1908	1909	1910	1911	1912	1913	1914
<b>Fish:</b>							
Canned salmon...	\$65	\$394					\$13
Canned fish other than salmon or shellfish...	351		\$232	\$7	\$144	\$9	18
Oysters...	44						
All other shellfish...		33					32
All other fish and fish products...							
<b>Fruit:</b>							
Canned fruits...	7,727	15,557	1,082	1,656	7,655	1,854	2,518
All other fruits prepared or preserved...		11		15	26		27
<b>Meat:</b>							
Canned beef...	641	1,919	548	75	242	604	346
Canned pork...		47					
All other canned meat products...	86	716	945	2,147	47	115	169
Condensed milk...	35,601	44,603	31,294	55,158	84,153	145,056	115,033
Vegetables, canned...	862	2,691	497	334	490	313	264
All other, including pickles and sauces...	3	335	187	157	299	142	399

The tariff in Siberia will prevent any great increase in sales of American canned foods in eastern Siberia, although the climatic conditions and large number of military and railway officials create a fairly good demand, now supplied by the canning establishments of Odessa and Simferopol in southern Russia.

In Manchuria the trade can be increased to some extent because the tariff is Chinese, while the influence at the principal centers along the railway is Russian. Credit conditions, however, call for a certain amount of knowledge that can be best gained by visits of representatives.

## JAPAN.

## INTRODUCTION.

The great progress made by Japan as a world power and commercial nation has led Americans to think of the Japanese as having adopted western customs to a much greater degree than is actually the case. The Japanese have been most wise in their attitude toward western civilization; they have sent their young men to every foreign country to study and observe modern life and inventions in those countries; they have employed American, English, German, and other foreign experts to come to Japan to erect manufacturing plants and to help teach them at home the most successful methods of western nations; but only those features have been adopted that blend satisfactorily into Japanese life or are necessary to the country in its development as a world power.

The changes are most noticeable in education, in the adoption of modern western inventions, and to some extent in dress, but there has not been the change in the home life of the masses that many westerners have been led to believe.

A study of Japanese home life and housekeeping will throw light upon that phase of the subject treated in this report—the adoption of western customs in matters of food, more particularly canned food.

Of the 52,985,000 inhabitants of Japan proper only about 5 per cent may be classed as well to do, and even these share that spirit of economy which pervades the nation. Nowhere in the world is there so much happiness derived from the simple life. It will be well to outline in a general way a typical home of the Japanese middle class, so that it will be easier to judge of the probability of changes along this line and of the prospects of a market for American canned goods among the masses of Japanese.

## THE JAPANESE HOME.

A number of causes have affected the size of the Japanese house, which seems much too small for a comfortable habitation in the eyes of the foreigner. In the first place, the people themselves are small, the average height of the Japanese male adult being 5 feet 3½ inches and that of the female 4 feet 9½ inches. As it is the usual custom to sit on the floors upon cushions, with the legs bent beneath, great height of ceilings is not desirable. The low ceilings may also be attributed to the lack of any heating systems other than the small charcoal brazier known as the "hibashi." The frequency of earthquakes throughout Japan has been a largely contributing cause, as well, and the question of expense in a country where economy reigns supreme has also had a powerful influence.

The smallest of Japanese houses, in the closely built sections of the cities, are only 9 by 12 feet, but of course these are for the poorest classes only. Nearly all houses are built of wood. In Tokyo, for example, only about one-eighth of the houses are built of other material, and Tokyo is the capital and principal city of Japan. Japanese houses may therefore be thought of as light wooden structures of one or at most two stories. The houses of the better classes are always surrounded by a small inclosure, with a garden and a

porch. Sliding lattice screens, which extend from the floor to the ceiling and are covered with thin translucent paper, serve as both doors and windows. At night and during storms a series of solid screen doors, on the outside edge of the porches, are drawn out of a sort of closet to inclose the paper screens and to protect the house and its occupants from intrusion or from the weather.

If the exterior of the house appears modest to the western eye, the interior gives the impression of extreme simplicity. The paper-covered screen sliding doors are used not only to form the outside walls, but also the partitions between the rooms. The floor is covered with thick matting laid in squares or mats. These mats are always of one size—6 by 3 feet—and the area of a room is spoken of not by feet and inches but by the number of mats. Rooms are usually four, six, or eight mats—that is, about 3 or 4 yards square. The mats are really mattresses, about an inch and a half thick, covered with matting and bound around the edges with coarse hempen cloth. There is absolutely no furniture in the room except a few flat cushions upon which to sit in the eastern fashion. In an alcove is hung the only decoration in the room, a painted scroll, or "kakemono," with some handsome ornament of porcelain containing flowers or a bronze on a low stand placed in front of it.

Three-room houses are common among the artisan class, and a five-room house may be taken as the smallest in which a man of the middle class would live. The average size of the houses occupied by this class is seven to eight rooms, and to a certain extent the size of the house fixes the class to which the occupants belong. As the rooms do not differ greatly, they can be used indiscriminately for different purposes. The only exception to this rule is the kitchen. The differences between Japanese and American kitchens is so great that a comparison is difficult. The heart of the kitchen, the kitchen stove, is little more than a hearth. Charcoal is the fuel generally used, and a wooden frame built over the hearth and covered with plaster, with one or more holes in the top, in which are placed the rice pot, soup pot, or pot for heating water, constitutes the main stove. A skylight in the roof allows the escape of smoke or gas. In some of the better-class houses the stove is more substantial, having a chimney and other features less calculated to spread fire. The main rice stove is generally supplemented by a smaller hearth built of plaster, stone, or sometimes of iron, holding a pot for other purposes than cooking rice or heating water. The small pieces of charcoal used as fuel rest on an iron grate immediately below the bottom of the pot and are handled by long iron rods called "fire chopsticks." The bellows consist of a hollow bamboo tube, through which the charcoal is blown to cause it to glow. The pot can be replaced by a frying pan with a large handle or even by a grate upon which broiling may be accomplished. The inconvenience of such cooking suggests the possibility of selling fireless cookers among the Japanese. The kitchen implements are crude. Large wooden spatulas or spoons, a few knives, wooden bowls, and mortars and pestles for pounding soft objects may be listed as the most important accessories, and there is a dresser containing most of the china used for serving. The sink for washing is usually made of wood, with bamboo pipes for drainage, and next to the sink are placed large porcelain jars that contain the water needed for washing. In prac-

tically every kitchen will be found a small shrine to the rice god, before which are placed daily offerings of rice and flowers.

No special rooms are set aside as dining rooms or bedrooms. All meals are served on little individual trays with legs about 6 inches high. These are brought by the servant into whichever room may be occupied at the time and placed in front of each person seated on the floor. Likewise, to prepare a bedroom a mattress and bed covering are taken from the closets where they are kept during the day and made up for sleeping purposes on the floor of any room desired. From the Japanese point of view, an American house, on account of the excess of furniture and ornaments, partakes too much of the nature of a museum or curiosity shop.

#### JAPANESE FOOD AND MEALS.

Rice is the staple food of the Japanese, and it holds as important a place in the meal as bread does in western countries. No other foodstuff stands so high in popular esteem, and the fact that the rice god has shrines all over Japan indicates the importance of rice as a food. Other cereals are used, although to a less extent. Barley, millet, wheat, and buckwheat are raised in Japan and flour made from these grains is used in making cakes and as an ingredient in many dishes.

Soy, a sauce made from soya beans, has an important place in Japanese meals. This sauce is exported to England in large quantities and is used there as the basis for the well-known Worcestershire sauce. Soy sauce, which is somewhat similar to the Worcestershire sauce, is an invariable side dish at every meal and nearly every article eaten is first dipped into the small bowl of soy placed on every meal tray.

Another article of food universally popular is the Japanese pickle, made principally of garden vegetables, especially the large Japanese radish. Cucumbers, eggplants, small turnips, and greens of various sorts go to make up this apparently vital accessory of Japanese meals. It is made by pickling the various articles in salt with a paste of powdered rice bran and some vinegar, and to foreigners the taste and smell are alike objectionable. A large and growing industry in canning this pickle, known as "konomono" or sometimes "fukuginzu," has developed at a number of the Japanese cannery establishments. The average price per barrel for pickled radish is about 3 yen (\$1.50 gold).

"Miso" soup forms an important dish at breakfast. This consists of strips of radishes, seaweed, eggplant, or other vegetables cooked with bean curd and water. The cooking is not continued for a long period and so few vegetables are used that the soup partakes only slightly of the flavor of the ingredients.

The usual Japanese breakfast consists of rice, miso soup, pickles, and occasionally fish. Tea is always served with meals and is drunk clear without sugar or cream. The Japanese pride themselves upon their quickness at meals, there being a Japanese proverb that places quickness at meals as an accomplishment equal to fleetness of foot.

The midday meal consists of a vegetable or fish soup, some boiled vegetables, and generally fish, either dried or cured, such as herring,

sardines, or mackerel. However, where fish can be obtained fresh and there are not many points in Japan where this is not the case, it is served raw in slices, which are dipped into the soy sauce before being eaten and are greatly relished by the Japanese. Rice, pickles, and tea, of course, are served at this meal, as they are at all meals. The evening meal does not differ greatly from the midday meal except in the variety of fish or vegetables.

From the foregoing it can be seen that rice, fish, and vegetables are the principal staples. Religious tenets do not preclude the use of meat, as in some eastern countries; consequently, in some of the larger towns, considerable quantities of beef and pork and domestic and other fowls are also consumed, but as yet they do not enter into the daily diet of the masses of Japanese. Of vegetables there are potatoes, carrots, turnips, yams or sweet potatoes, onions, eggplants, cucumbers, beans of several varieties, peas, spinach, and lettuce; other plants used as vegetables are burdock, bamboo shoots, the bulbs of tiger lilies, the rhizome of the lotus, water shield, snake gourd, and water pepper. Mushrooms and other edible fungi are greatly liked and are canned in a number of the Japanese factories. Seaweeds are also in great demand and when dried are eaten like wafers or dipped in soy sauce. Cherry flowers, salted and brewed into a decoction, are a delicacy, and chrysanthemum flowers of the large yellow variety are fried and boiled in brine and pressed.

#### SEA FOOD.

Fish teem along the coasts of Japan and many of the edible varieties are unfamiliar to Americans. There are said to be 600 varieties of fish in the waters surrounding the islands, but the most common and the greatest favorite seems to be the "tai" (*Pagrus cardinalis*). This fish is served in many different ways. There is said to be an old Japanese book that bears the title "The Hundred Excellent Methods of Dressing the Tai," showing that cook books were not unknown to the early Japanese. The tai is considered the best of Japanese fish to serve raw, and many Europeans and Americans who have had occasion to come in close touch with Japanese home life assert that the taste for raw tai is not by any means a difficult one to acquire. Other fishes caught and eaten are the plaice, gilt-head, tunny, bonito, carp, mackerel, pike, trout, flying fish, white-bait, sand-fish, goby, sting-ray, swordfish, sardine, salmon, herring, sole, hairtail, goosefish, cod, halfbeak, yellow tail, gray mullet, shark and sea eel, and many others. Whale meat is sold in the market at Nagasaki and at other points, and is greatly relished cooked as well as raw. Some cuts do not seem unlike beef, while the choicer cuts are colorless and opaque, more or less like codfish.

Shellfish and crustaceans are plentiful, and many large clams and mussels that are not eaten in America are eagerly sought in Japan. Among these none is more popular than the abalone, or awabi, a large shellfish that seems tough and lacking in flavor to the western taste. A large quantity of these are dried and most of the canning factories in Japan pack them. They are sent to Japanese in other countries, as well as in considerable bulk to China. Among other shellfish found are the oyster, clam, sea mussel, razor shell, cockle, swan mussel, otter shell, and rapana. These are generally boiled and

sometimes are served in a bowl of slightly flavored water called soup by the Japanese.

Americans are coming to know the canned crab meat imported from Japan and also the shrimp and prawns, which bid fair to rival the crab meat in popularity. An account of the catching and canning of these crustaceans will be found in the section of this report dealing with canning houses. While there are quantities of crabs of different varieties, the two important kinds are found only in certain localities in Japan, and these are remarkable for their immense size. Some of the crabs of Hokkaido and the Kunijiri Islands measure as much as 6 feet from tip of claw to tip of claw. Of these huge crabs the meat of the claws alone is eaten; the remainder is used as fertilizer when dried. The shrimp, especially the very small varieties, are dried and form a sort of relish or side dish much in favor. The larger prawns, called "ebi," are roasted or fried and dipped in soy. The lobster, which is in reality a large crawfish, is very abundant on the western coast and in Chosen. The cuttlefish and octopus are very common articles of food, and when fried are not unlike the soft-shell crabs of the eastern coast of America in taste. They are more often boiled, however, and served in a bowl of slightly flavored water. The cuttlefish is dried in large quantities and canned to a certain extent for the use of Japanese in foreign lands.

#### FOWL AND GAME.

The fowl and game used comprise all of the domestic fowl known in America. Eggs are freely used, mostly in the form of a tough omelette. Such game as the crane, swan, heron, wild goose, duck, pheasant, quail, pigeon, woodcock, snipe, lark, water rail, and even the sparrow are occasionally eaten, although the old Buddhist objection to taking a life still persists in some sections of the country.

Except for the smaller birds, which are eaten in the fingers, the absence of knives and forks at Japanese meals makes it necessary to prepare the meat before serving so that it can be eaten with the chopsticks. Consequently, such food is usually cut in small slices and served in the thin watery soup so favored in the Japanese cuisine. This feature should be of interest to those planning to export canned goods to Japan.

#### USE OF CHOPSTICKS.

The use of chopsticks is general, except among the most well-to-do classes, who have adopted European knives and forks and to some extent European cuisine. Small bowls of china or lacquered wood are the usual table equipment. After the various solid portions of the food have been lifted to the mouth with chopsticks the liquid remaining is sipped from the bowl. In the case of rice, which would be tedious to pick up grain by grain, the bowl is often raised to the mouth and the rice shoveled or pushed in with the chopsticks. It is also customary to pour a little tea into the rice bowl after it has been nearly emptied, and in this way the few remaining grains of rice are washed down as the tea is drunk. It is evident, therefore, that prepared foods that can be broken and eaten with chopsticks are more desirable than those requiring a knife and fork.

At public places the chopsticks at each meal must be new; this is indicated by the fact that the chopsticks are made from one piece of wood and are left joined together, as were matches at one time in the United States. These new chopsticks are incased in a thin paper envelope, sealed at the end, and bearing Japanese characters advertising either the hotel or some firm that has furnished them free to the proprietor for the sake of the publicity thus gained. Toothpicks, which are freely used by all Japanese at meals, are also inclosed in envelopes that frequently bear advertising matter. A Japanese mineral water called "Tansan" is frequently advertised in this manner. Match boxes bearing the advertisement of a European brand of condensed milk are also found.

The foregoing general outline of the usual Japanese meals makes no pretence of describing the dozens of preparations of beans, vegetables, and fish commonly consumed, but is given merely for the purpose of conveying to those not familiar with Japanese life an idea of the great difference between meals as served in Japan and those to which Americans are accustomed.

#### FRUITS AND SWEETS.

Fruits and sweets are much liked by the Japanese, but are usually eaten between meals, although with the advent of canned fruits their use at meals is increasing.

The apple is grown in the northern island of Hokkaido and is sent all over Japan, but is consumed principally in the cities. Its use is growing and there should be a larger field for the American apple, which surpasses the Japanese in color, size, and quality. Oranges are brought from the southern islands of the Japanese group, and the mandarin seems to have the greatest popularity. Great quantities of these are sold in small baskets or bags along the railways, and it is rare to see a Japanese starting on a journey, or in a tea garden, or even at the theater, without a few oranges or some other refreshment to be eaten between meals. The shaddock is also very common. The cumquat is found generally in season and is being canned most satisfactorily in southern Japanese canning houses. The loquat, a fruit introduced from China, is not so much of a favorite as in that country, but is found in many places. Its large pits leave but little flesh to be eaten and the pomegranate is open to the same objection on account of the quantity of small seeds. The pineapple is growing in favor, and is imported from Taiwan (Formosa). A considerable portion of the fruit raised there is canned and exported to Japan in that form. (For further details see "Pineapple-Canning Industry of the World," Special Agents Series No. 91.) The canned pineapple is found in nearly every shop in the larger cities of Japan and at many of the railway stations, but the product is principally Formosan, as only a few of the largest groceries in the principal cities, catering to the trade of the foreigners in Japan, carry the Hawaiian pineapple. Bananas also come from the tropical sections of Japan and are favored. In Taiwan this fruit is dried and packed in cans (see p. 35). Figs are eaten in the fresh state and are sometimes dried, but do not form so important an item as in other sections of the East.

The peach of Japan differs considerably from that of America. It is pointed at the top, and is lacking in flavor, although often attractive in color. It is largely raised and canned in the western part of the main island of Japan, near the town of Nagano, where considerable fruit of other sorts is also canned, such as plums, strawberries, and cherries. These fruits do not compare favorably in quality with the American product. The edible cherries have only lately been introduced, for although cherry trees are grown all over Japan, they are cultivated for the blossoms, the fruit rarely maturing. The same is the case with the Japanese plum, the flowers of which are highly prized. The plums are hard and inferior, and are often pickled in vinegar or preserved in perilla leaves. The average price per barrel for pickled plums is about \$3.25 United States currency.

Native pears are not the equal of the best American varieties, and they are not canned to any extent, although this might really improve the flavor. Foreign pears have been introduced and in 1911 there were 321,977 trees of this character. In addition, there were 7,130,762 trees of the native varieties. Probably the best and one of the best liked of Japanese fruits is the persimmon, which is not only relished in a fresh state but is pitted and dried. The fruit is, of course, much larger than the wild American variety, and often attains the size of a peach or a small apple. Among all classes of Japanese the dried persimmon, with sometimes a little sugar added, is prized as a sweetmeat. Small bamboo sticks, or skewers, thrust through a dozen or two dried persimmons are sold everywhere to children and others for a few sen (sen equals half a cent). According to Government reports, there were 9,566,102 persimmon trees in bearing in 1911.

The large Japanese chestnut is likewise much eaten in Japan. Flour is made from the pounded nuts and used in making cakes and confections. The nuts are also candied by boiling in sugar.

As fruits and sweetmeats are usually eaten between meals, the occasion for the continued munching of these dainties must be understood. An explanation of the custom of tea drinking in oriental countries, which custom assumes such vital importance in the daily life of the Japanese, will demonstrate how frequently there is an excuse for offering some slight refreshment with the tea. The oriental early learned that drinking water should be boiled as a safeguard against the attacks of such diseases as typhoid and cholera. No understanding of the germ theory was necessary to lead him to this conclusion, and it is almost impossible to determine when the drinking of boiled water originated. Tea drinking was introduced into Japan about the eighth century, and its use by all classes dates from the sixteenth century, according to some authorities. Tea as taken in Japan is merely boiled water slightly colored with tea leaves and really is only a pleasant form in which to take the water.

Politeness, which plays so important a part in all phases of Japanese life, requires that no caller, whether at business house or home, shall carry conversation beyond the first greetings until tea has been offered and drunk. At social calls, cakes, fruit, or dainties of some sort are always offered with the tea, and if the guest does not partake it is expected that the solid refreshments will be taken along to be eaten at home. They are usually wrapped in paper and handed the guest at the expiration of the call. This custom of taking some dainty with the tea is carried out at inns and tea houses along the

roadside and among all classes; even the jinrikisha coolies frequently stop to drink tea at the little inns and usually eat some trifle at the same time. It can be inferred that the food eaten between meals forms an important item of the total consumption. Sales of American crackers and small cakes might be effected if they could be introduced generally and could be made to appeal to the Japanese taste. That it is possible to appeal to the taste of the Japanese with foreign cakes is shown by the popularity of sponge cake. There is no sweetmeat more popular or more generally used than this foreign cake, which was introduced more than three centuries ago by the Spaniards.

#### CANNED BANANAS.

[Consul A. A. Williamson, Taiwan (Formosa).]

The canned Taiwan bananas are put up in flat tins measuring about 9½ inches by 7 inches by 1 inch, and are dried, or desiccated. The cans are imported from Japan and have a brass finish, with a picture on the cover representing a bunch of green bananas on the tree against a deep-red background. The cover bears the name in Japanese characters and in English (incorrect but sufficient).

This canning of bananas is a new industry here and, although it is starting in a small way, it promises to grow into something big later on. At present the factory employs some 24 hands, 20 of which are girls employed in preparing the bananas, and 4 are men employed in sealing tins. The drying process aims at preserving the natural flavor of the fresh fruit and is fairly successful in doing so; but it was found impracticable to boil or heat the product in the tin to create a vacuum, and the head of the factory states that he found it necessary to invent a new machine to create the vacuum without heat. The fresh fruit is, however, dried by heat. The prepared product resembles the fresh banana in shape, but is dark brown in color and considerably smaller in size. The manager states that it takes 10 pounds of fresh bananas to make 1 pound of the prepared product. The tins are sealed by hand and are opened by a key that unwinds a wire passed around the tin under the soldering. This oblong shape was adopted in deference to Japanese custom, which decrees that presents to friends, etc., shall be wrapped in thick white paper and tied with a special sort of string called "mizu-hiki." The present selling price, retail, is 1 yen (\$0.498) per tin.

The man in charge of the factory states that from 500 to 700 tins are sold daily for local consumption, and that he has received numerous offers from firms that desire to export the goods as agents.

If this business proves as successful as is at present indicated, the factory will have to be enlarged within a short time, when new equipment will be required. If American manufacturers make any sort of machinery that might be used in this process, it might be well to send out word and have catalogues, etc., sent to this consulate, which will be glad to see that they reach the proper persons.

The following is a translation of an article in the Taiwan Nichi Nichi Shimpo of December 20, 1913:

The Taiwan Bussan Kabushiki Kaisha (the Formosan Products Co.) of Ka-Keifushigai, Taihoku city, has recently opened the sale of canned bananas. The product has been favorably received in Japan, and the company is getting order after order. At present dozens of workers are engaged day and night, and the capacity of the cannery is some 15,000 tins a month. The Bergman Co. (German), of Yokohama, has applied

to the company for the sole agency, offering to export the tinned bananas to foreign countries, and taking 100,000 tins per month. The demand has grown so large that the company can not fill so many orders in its present condition.

The process of preparing canned bananas has been invented by Mr. Shibakawa, a director of the company, and the bananas in cans retain their fine natural flavor.

#### GOVERNMENT AID TO CANNING INDUSTRY.

The Japanese Government, which has done so much to foster and encourage the introduction of modern methods in every line of industry, has not neglected the encouragement of canning among the Japanese. Although probably no other country in the world has established schools of canning, Japan has a number of such schools located in different sections of the country.

These schools were started primarily as fishery institutes, because of the importance of that industry. The canning and curing of fish is really the basis for that study, yet the students are also taught the methods of canning other products; there are 36 different kinds of food on the list of the Kyoto Ken Institute. The course at this institute includes can-making methods and inspection of provisions and endeavors to impart a thorough knowledge of all matters connected with the canning industry. Each institute is divided into two branches—a training school and an experimental station—somewhat along the lines of American State agricultural colleges. Lecturers are sent out to different near-by points and occasionally exhibitions are arranged by the alumni under the supervision of the school.

The Kyoto Fisheries Institute, one of the six organized by the various local governments and assisted by the central Government, is located at Miyazu in Tango County, in the Province of Kyoto. Its location at a point where the warm and cold currents of the Japan Sea meet affords the opportunity of studying those varieties of fish belonging to both currents. This institute was established in 1899 by the governor of Kyoto Province and did not grow rapidly until the Russo-Japanese War, when it received orders to help supply the Japanese Navy with canned fish. From the start thus made, in spite of a fire that destroyed the buildings in 1907, the institute has grown and while yet small is doing excellent work. Since its inauguration 415 students have taken the courses offered. The following shows what a large proportion of the students have been interested in the canning features of the course: Fishing and canning course combined, 60; fishing course, 87; canning course, 266; pisciculture, 2; total, 415.

It is an interesting fact that about 50 per cent of the cost of upkeep is covered by sales of articles canned by the students. Of the 40,000 cans of different products packed annually, 30,000 cans are purchased by the army and navy, and the remainder is sold on the open market. Free tuition is given, but students are obliged to pay their board, which amounts to \$2.75 per month, and extras amount to about 75 cents per month. The age of students is from 16 to 22 years. The course is of one year's duration.

The canning shop of the institute is equipped with modern can-making machinery and other apparatus used in the operations of canning. The museum attached to the institute not only has a good collection of specimens of aquatic products but also sample cans of

canned goods from America and Europe, as models for demonstrating methods of canning in other countries. The institutes endeavor not to lose touch with the graduates and cooperate in assisting and advising them in getting a start in the canning business.

#### PURE-FOOD REGULATIONS.

The regulations promulgated on April 1, 1901, in regard to the control of articles of food, containers for such food, and the methods of manufacture are very broad in respect to the powers given the authorities.

#### GOVERNMENT REGULATIONS.

Article 1 of these regulations prohibits the manufacture, sale, gift, use, or possession of such foods or utensils used in the preparation or canning of foods as may produce danger to the public health.

Article 2 provides that the authorities can take, without payment, samples for examination from any manufacturer or storekeeper at any time.

Article 3 provides that those failing to comply with the orders of the officers within the time specified can be fined not less than 20 yen (\$10) and those who resist the officials in the performance of their duties may be imprisoned for not less than a month.

Article 4 stipulates that failure to comply permanently with such orders may be punished by imprisonment for not less than a year. Bribery in connection with such inspections will be treated under the provisions of the criminal code.

The provisions relating to food containers and utensils follow:

Article 1 provides that the provisions shall cover all utensils used for eating, drinking, cooking, or in the preparation of food. Also vessels for keeping, storing, or measuring foodstuffs.

Article 2 prohibits the manufacture or repair of such utensils with materials containing lead or an alloy containing more than 10 per cent of lead.

Article 3 prohibits the use of solder containing over 20 per cent of lead and tin plate with over 5 per cent of lead. Solder containing not over 50 per cent of lead may be used in canneries for the outside seams of cans and for closing vent holes in cans.

Article 4 prohibits the manufacture of eating and drinking utensils coated with hora (a kind of enamel) or yuyaku (a kind of lacquer) in which arsenic or lead may be detected after boiling for 30 minutes in water containing 4 per cent of acetic acid. This regulation applies to repairing as well as manufacture.

Article 5 states that trade-marks or some other identification mark that will not easily be removed from the metal should be affixed by manufacturers or importers, although importers for the present may paste their own labels on goods imported or use some identification mark in place of stamping the mark on the metal.

Article 6 stipulates that eating or drinking utensils manufactured or repaired in contravention of articles 2-5, can not be sold, stored, or exhibited with the purpose of sale, and that metallic eating and drinking utensils without the identification marks provided in article 5 likewise can not be sold, stored, or exhibited with the purpose of sale.

Article 7 provides that eating or drinking utensils made or repaired with copper or its alloys must not be used when the parts coming in contact with the food have lost their original luster or have become divested of the original coating.

The remaining articles deal with the laws under which the authorities may proceed to enforce the above-mentioned regulations.

#### HOKKAIDO GOVERNMENT REGULATIONS.

The local branches of the Government are also taking an active interest in the endeavor to standardize and regulate canning as may be gathered from decree No. 75 of the Hokkaido Government regulating and supervising the canning of crab meat, promulgated on October 1, 1911.

Article 1. Persons desiring to engage in the canning of crabs must apply for a permit from the governor of Hokkaido, through the office of the district in which the factory is to be located.

Article 2. Factories manufacturing canned crab for export must make their factories conform to the following conditions:

a. The ground floor or space used for the preparation of crab meat must be cemented, paved, or boarded and well drained.

b. Factories must be fitted with boilers, steaming kettles, and wooden tubs (factories established prior to the issuance of these rules may temporarily use the direct-heating steam kettles until the boilers are obtained).

c. Steam kettles (direct-heating steam kettles included) should be fitted with pressure gauges and safety valves. (Direct-heating steam kettles should also be supplied with glass water-level gauges.)

d. Double-seaming apparatus for closing cans must be used (factories established prior to the issuance of these rules may temporarily continue to solder tops upon cans until double-seaming machines can be obtained).

Article 3. The pressure gauges on steam kettles must be tested annually before beginning operations and the differences of reading posted in conspicuous places near the kettle; gauges showing markedly incorrect readings must not be used.

Article 4. Applicants for the establishment of new factories must furnish the following particulars accompanied by a plan of the factory: (1) Situation of the factory; (2) equipment, machinery, and accessories (kind and number of steam kettles, driving machines, and can-making machines); (3) the method by which water is supplied; (4) kinds and estimated amount of manufacture; (5) market for goods (whether for home consumption or export); (6) working period; (7) factories having boilers and engines must conform to article 1 of the regulations for the supervision of boilers and engines on land.

Article 5. Permission of the Hokkaido Government must be obtained for the enlargement of any factory or the change in location of buildings or equipment.

Article 6. Application must also be made for the closing or suspension of a factory or the reopening after suspension.

Article 7. The Hokkaido Government has the right to send officials to inspect the factories and to supervise the manufacture.

Article 8. Those who engage in the manufacture of canned crabs without permission or who violate articles 2 and 5, or those who have

permits to manufacture for home consumption and who sell their goods for export, may be fined not more than 50 yen (\$25).

Article 9. Persons violating articles 2 and 5 or refusing to manufacture for home consumption and who sell their goods for export may either be restrained temporarily from continuing operations or the permit may be canceled entirely.

Article 10. For factories where boilers and engines are installed, articles 2, 7, 11, and 19 of the regulations for supervising boilers and engines on land are applicable.

#### REGULATIONS OF CANNERS' GUILD OF NEMURO AND CHISHIMA.

If the supervision of the local government is seemingly broad, the rules of the Canners' Guild of Nemuro and Chishima endeavor to still further improve the quality of the crab meat canned in Hokkaido, as may be determined by the following set of rules:

Article 61. When putting up crabs and shrimps in cans or bottles the following particulars should specially be observed:

1. Tin plate to be employed should be of "charcoal" brand, of over 90 pounds per case.

2. Worn and rusty tin plate should not be employed.

3. The can-making process should be that of roll tightening, but when unavoidable, outside solder jointing may be employed for the time being.

4. Seams on the sides should be of folder-over joints.

5. The cross section of the side seam in outside solder-jointed cans should be covered with tin.

6. Oil, leaks, resin, and fat are used as flux for sealing solder; the use of zinc-chloride water should be avoided.

7. Crabs and shrimps should be killed immediately after they are caught, and should not be exposed directly to the sun; if possible they should be cooked and put up in cans or bottles the same day.

8. Prepared crab meats should be cleansed in water or hot water.

9. Prepared crab meat, after being cleansed, should be slightly pressed to drive out what water may have been absorbed in washing.

10. Crab meat should be wrapped in good sulphuric-acid paper.

11. When preparing crab meat, rusty cutlery should not be used.

12. When putting up crab meat cans or bottles must always be rinsed with hot water.

13. Quantity of salt to be used for each pound can is 0.8 to 1 momme (1.69 to 2.12 drams avoirdupois) of better than second-class home-made salt, free from such impurities as earthy matters, ashes, etc., or German salt.

14. Contents, after completion, must be of solid meat of over 105 momme (0.87 pound avoirdupois) for the pound can and over 50 momme (0.41 pound avoirdupois) for the half-pound can.

15. Cooking pans must be always cleaned and must not be rusty.

16. The water in which crabs and shrimps are cooked must be free from sulphur or iron.

17. Application of heat, when ordinary kettles are used, must extend over 2 hours at a boiling temperature—over 1 hour before and over 1½ hours after venting. In case steam heat is used, application of heat must extend over 40 minutes before and over 1 hour

and 20 minutes after venting, at a pressure of 4 pounds, as measured on the steam gauge.

18. Mineral acids or acetic acid should not be employed.
19. When the ordinary kettle is employed, a tub should be fixed and on its top a lid with a hole should be applied.
20. Cans, after sterilization is finished, should quickly be put into cold water and cooled.
21. Vent holes should be as small as possible.

#### RULES OF THE HIROSHIMA CANNERS' GUILD.

Guilds such as the one quoted above are numerous in Japan. They correspond to our canners' association in America, but with Government backing and supervision they exert a stronger influence over their members, as may be seen from the rules and regulations of the Hiroshima Canners' Guild (Kanzume-Seizo Dogyo Kumiai), which follow. The objects of the guilds are stated to be to rectify improper commercial habits and to promote the interests of the canning industry by the cooperative efforts of all those engaged in the business.

By article 8, the guild, in order to accomplish the objects set forth, undertakes the following items:

1. Advancement of the art of canning and the adoption of improved methods pertaining to the industry.
2. Standardization of shapes and contents of cans.
3. Collection of samples produced both at home and abroad for reference of the trade.
4. The dispatch of inspectors to various points of the world when regarded as necessary.
5. Rendering facilities for exhibiting articles at world's fairs, exhibitions, competitive shows, etc.
6. Responding to the inquiries of the governmental offices and offering opinions thereto.
7. Supervising laborers, employees, etc., and investigating methods of encouraging and protecting them.
8. Settling commercial quarrels between members and arbitrating commercial troubles between members and outsiders when requested to do so.
9. Members must inform the president of the guild (stating full details) when an employee is discharged on account of improper behavior. The president and committee accordingly may, if the evidence warrants, prevent the reemployment of such person by any other member of the guild, or may cancel such prohibition and so notify the members.

Members are obliged to expose in a prominent place at the entrance of their places of business a sign showing that they are members of the guild. Members can not refuse to act as officers, if elected, nor resign after election except on account of illness or old age. The principal officials serve without pay, but the clerks and inspectors receive salaries.

Article 26 provides for the standardization of cans and solid contents.

Breach of rules and delay in paying dues result in fines varying from 5 yen (\$2.50 gold) to 100 yen (\$50 gold).

A system of rewards and pensions to employees of long standing or those deserving of special commendation is provided for through the committee of the guild. Arbitration is also undertaken.

#### REGULATIONS OF YOKOHAMA MARINE-PRODUCTS GUILD.

The marine-products guilds (of which there are 220) are of much importance at the principal points of exports, as Yokohama and Kobe. The main object of these guilds is to examine the manufacture of marine products and to make inquiries respecting markets for their sale.

The regulations of the Yokohama guild for the examination of marine products for export, adopted March 10, 1913, show the anxiety of the Japanese to maintain a standard for their goods. At one time the variation in quality of canned crab threatened severe loss to the better class of canners, hence the adoption of these new rules:

**Article I.** There are 13 kinds of fishery products for export that are to be examined by this guild, but for the time being 5 of them only, that is, canned crabs, shrimps, salmon, trout, and abalone, are subject to examination. The 13 kinds are as follows: Canned crabs, canned shrimps, canned salmon, canned salmon trout, canned abalone, dried abalone, dried trepang, dried cuttlefish, dried shrimps, gelatine (kanten), seaweeds (kombu), cut seaweeds (kizami kombu), shell ligaments.

**Article II.** Members of the guild can not sell or export (to Taiwan and Chosen inclusive) those articles that are subject to examination and yet not examined, and can not export (to Taiwan and Chosen inclusive) those goods that are rejected in examination.

**Article III.** Examination is held in the place fixed by the guild, but by the request of owners of articles subject to examination it may be held on the spot where such articles are stored. In such cases the expense must be borne by the owners.

**Article IV.** Those who apply for examination shall pay the fee fixed by the guild, said fee to be collected at the following rate, irrespective of the goods passed or rejected in the examination: Canned crabs and shrimps, 4 sen per case; canned salmon and salmon trout, 2 sen per case; canned abalone, 2 sen per case.

**Article V.** Those who apply for examination should send in a written application for the guild office three days before the examination will be made.

**Article VI.** Examinations will be made in the order of receipt of applications, but when it is deemed necessary the chief and examiners, without waiting the applicant's request, may make the examination.

**Article VII.** When the goods are passed, one certificate will be issued for the whole lot and the mark provided for in Article XX will be stamped on the outside of each case. If requested for each individual shipment, however, separate certificates can be issued. For those articles rejected in the examination, the mark provided for under Article XX will be stamped on the front of each case.

**Article VIII.** When examination is to be made, it is necessary that two examiners and the applicant concerned shall be present.

**Article IX.** The guild is provided with more than two examiners and a certain number of assistant examiners and inspectors, all of

whom will be either appointed or assigned to duty by the chief of the guild.

Article X. When dissatisfaction at the examination is felt, application for reexamination can be made. When such application is presented and the chief of the guild deems it necessary, other examiners shall perform the examination, and sometimes officials may be present. If at the reexamination the preceding one is found to be right and just, the examination fee will be charged anew.

Article XI. Examination is made as to the packing, outside appearance of cans, and their contents. As to the contents of cans, if deemed necessary, warm-room examination (heat tests) or chemical examination will be made.

Article XII. Examination of the outside appearance of cans is made in conformity with the examination standard; that is, more than 3 cases out of the lot of each 50 cases (in proportion when less than 50 cases) of one and same kind are unpacked, and when even one can is found faulty the packing must be renewed and be subject to reexamination.

Article XIII. Examination of the contents of cans is made according to the examination standard; that is, cans are opened in the following ratio, and if even one can is found faulty exactly the same examination will be repeated, and if the same fault is found the whole lot shall be rejected: Not more than 5 cans out of less than 50 cases of one and the same kind; not more than 10 cans out of 50 to 100 cases; not more than 20 cans out of 100 to 500 cases; not more than 30 cans out of more than 50 cases.

Article XIV. When the packing is incomplete and does not comply with the examination standard, examiners may order repacking.

Article XV. When articles were manufactured for test purposes and bear the testimonials from the Government offices, they may not be subject to the examination regulations.

Article XVI. The applicants must inform the guild office as to what steps are to be taken in disposing of the rejected goods.

Article XVII. With respect to the disposal of the rejected goods, examiners can at any time inspect stores or warehouses, and when it is considered that something is wrong the chief of the guild will be informed. In such cases the chief of the guild takes the steps noted under Article XVIII.

Article XVIII. When members of the guild sell or export (to Taiwan and Chosen inclusive) the goods that are subject to examination and yet not examined, or export (to Taiwan and Chosen inclusive) the goods rejected in the examination, they are fined, through the decision of the official meeting of the guild, and the penalty is in conformity with the Article 75 in the rules of the guild.

Article XIX. The examination standard fixed by the guild is as follows, but names and inside quantity of canned "hanasaki kani," "zuwai kani," and "ke kani," which are different from ordinary kani (crabs), must be clearly described on the top of the case. When names and quantity of contents, as above mentioned, are not stated, examiners will describe them and then make the examination. The following is the examination standard for canned crabs and shrimp (momme = 0.008267 pound):

Details.	Passed.	Rejected.
<b>ORDINARY CRABS.</b>		
Signs and trade-marks on cans.	Complete and in conformity with regulations.	Incomplete and not in conformity with regulations.
Outside appearance of cans.	Roll-closing or outside fitting cans; good; soldering and shape of cans complete.	Inside fitting, rusty or expanded cans; incomplete soldering; damaged shape of cans.
Quality .....	Perfect meats, clear color, innate flavor.	Meats spoiled; discolored; stale, offensive odor; female or young crabs.
Contents .....	Solid crab meats: Over 105 momme for 1-lb. can; over 50 for ½-lb. can. Shrimp: Over 50 momme for 1-lb. can; over 25 momme for ½-lb. can.	Solid crab meats: Less than 105 momme for 1-lb. can; less than 50 momme for ½-lb. can. Shrimp: Less than 50 momme for 1-lb. can; less than 25 momme for ½-lb. can.
Reaction .....	Neutral or weak alkaline.	Acid or strong alkaline.
Injurious matter .....	None.	Contained.
Material for cans .....	Tin plate "charcoal" or lacquered and complete quality; more than 95 pounds per case for 1-lb. can; more than 90 pounds per case for ½-lb. can.	Not having the stated weight and incomplete quality.
Packing .....	Material for cases; thickness of end pieces more than 6 bu (0.739 in.); thickness of top, bottom, sides, more than 5 bu (0.596 in.); well dried, good quality, and no knots; securely packed.	Not using the stated board, and packing incomplete.
<b>ZUWAI AND KE KANI.</b>		
Signs and trade-marks on cans.	Complete and in conformity with regulations.	Incomplete and not in conformity with regulations.
Outside appearance of cans.	Roll-closing or outside fitting cans; good; soldering and shape of cans complete.	Inside fitting, rusty or expanded cans; incomplete soldering; damaged shape of cans.
Shape of cans .....	Big cans: 3 sun 3 bu in diameter (3.93 in.), 1 sun 8 bu high (2.14 in.); small cans, 3 sun in diameter (3.57 in.), 1 sun 5 bu high (1.783 in.).	Not having stated size.
Quality .....	Perfect meats; clean color; innate flavor.	Meats spoiled; discolored; stale, offensive odor; female or young crabs.
Contents .....	Big cans; solid meats, over 80 momme (0.662 lb.); small cans, solid meats, over 40 momme (0.331 lb.).	Big cans, solid meats less than 80 momme; small cans, solid meats, less than 40 momme.
Reaction .....	Neutral or weak alkaline.	Acid or strong alkaline.
Injurious matter .....	None.	Contained.
Material for cans .....	Tin plate "charcoal" or lacquered and complete quality; more than 95 pounds per case for 1-lb. can; more than 90 pounds per case for ½-lb. can.	Not having the stated weight and incomplete quality.
Packing .....	Material for cases; thickness of end pieces more than 6 bu (0.739 in.); thickness of top, bottom, sides 5 bu (0.596 in.); well dried, good quality, and no knots; securely packed.	Not using a stated board and packing incomplete.
<b>SALMON AND SALMON TROUT.</b>		
Signs and trade-marks on cans.	Complete and in conformity with the regulations.	Incomplete and not in conformity with regulations.
Outside appearance of cans.	Good; soldering and shape of cans complete.	Expanded and rusty cans; incomplete soldering; damaged shape of cans.
Quality .....	Perfect meats; clean color; innate flavor.	Spoiled meats; discolored, stale offensive odor.
Contents .....	Solid meats, over 105 momme for 1-lb. can (0.869 lb.); over 50 momme for ½-lb. can (0.414 lb.).	Containing less meats.
Reaction .....	Neutral or weak alkaline.	Acid or strong alkaline.
Injurious matter .....	None.	Contained.
Material for cans .....	Tin plate "charcoal" or I. C. or lacquered and complete quality; more than 95 pounds per case for 1-lb. can; more than 90 pounds per case for ½-lb. can.	Not having the stated weight and incomplete quality.
Packing .....	Material for cases; thickness of end pieces more than 6 bu; thickness top, bottom sides 5 bu; well dried, good quality, and no knots; securely packed.	Not using stated quality and packing incomplete.
<b>EAT SHELLS (ABALONE, ETC.).</b>		
Signs and trade-marks on cans.	Complete and in conformity with regulations.	Incomplete and not in conformity with regulations.
Outside appearance of cans.	Good; soldering and shape of cans complete.	Expanded and rusty cans; incomplete soldering; damaged shape of cans.

Details.	Passed.	Rejected.
<b>EAR SHELLS (ARALONE, ETC.)—continued.</b>		
Quality.....	Complete form; good color, clear juice, innate flavor.	Spoiled, offensive odor, very turbid juice; manufactured from dried ear shells, strongly acid.
Contents.....	Solid meats over 40 momme (0.331 lb.) for 1-lb. can.	Not having the stated weight.
Injurious matters.....	None.	Contained.
Material for cans.....	Tim plate "charcoal" or 1C or lacquered and complete quality over 90 pounds per case.	Not having stated weight and incomplete quality.
Packing.....	Material for cases; thickness of end pieces more than 6 bu; top, bottom, sides more than 5 bu; well dried, good quality, and no knots; securely packed.	Not using the stated quality, and packing incomplete.

The can containing meat of over 60 momme in weight is called "heavy," that of 50–60 momme "light," and that of 40–50 momme "lightest."

Article XX. Kinds, size, and impressions of the stamps and colors of the impressions are fixed by the guild.

#### CAN-MAKING FACTORIES.

Many young men from the Government schools of canning start into the canning business for themselves. Beginning, as a rule, with small capital, the plants established in this way are naturally primitive and are in some cases nothing more than a small shed attached to the house of the owner. In such cases practically the only equipment is secondhand machinery of the hand-operated type for making cans, for the manufacture of cans is at present an absolutely necessary part of all canning factories in the outlying districts. It is not unusual to find the factories of the larger centers manufacturing their own cans also, in spite of the fact that can-making factories are in existence in Tokyo and Osaka.

The principal work of these can-making factories consists in lithographing labels directly on the sheet tin and in lacquering the sheet tin for the protection of the contents, leaving the manufacture of the cans themselves to the individual factories. The largest can-making establishment of the three located in the city of Tokyo finishes annually 3,000,000 cans. At these can factories sanitary cans, made with German or Japanese double-seaming apparatus, are the only type manufactured. It was stated that not more than 10 per cent of the smaller canning establishments in Japan that manufacture their own cans own double-seamer machines. In many factories the older types of hand-soldered cans are made. This applies, however, to goods sold largely in Japan and not to a great extent to those for export.

Attention should be given to the difference between the size of cans manufactured for Japanese home consumption, in fact even for those for export, and the usual size of American cans. The economical habits of the Japanese preclude any demand for cans containing more than can be consumed at a meal, consequently the 2-pound and 3-pound cans of American manufacture are ordinarily larger than desired. A can containing approximately one-half pound or even

one-fourth pound is much more favored by the Japanese. Crabs, shrimps, and salmon for export are generally put up in flat  $\frac{1}{2}$ -pound and 1-pound cans 3.65 inches and  $4\frac{1}{2}$  inches in diameter and 1.9 inches and  $2\frac{1}{2}$  inches in height, respectively. The pineapple is about the only product put up in 2-pound or 3-pound cans. The height and diameter of pineapple cans are as follows: Four inches high, 3.4 inches in diameter, contents  $3\frac{1}{2}$  pounds; 3.7 inches high, 3.2 inches in diameter, contents  $2\frac{3}{4}$  pounds; 3.7 inches high, 2.9 inches in diameter, contents 2 pounds. The Japanese fruits and vegetables are rarely packed in cans containing more than 1 pound, and the cans are modeled on the French or Belgium types, being about 4 inches tall and 2.75 inches in diameter. There is a variety of cans found in the different factories, but greater effort toward standardization in this respect is being made by the guilds, especially for export. In making an effort to sell American canned foods among the masses of Japanese the preference for cans of small size should be borne in mind.

The price for manufactured cans delivered at the factories in the city limits of Tokyo, or f. o. b. for shipment, are 2.8 sen (0.014 cent) for 1-pound plain cans of the sanitary type in orders of not less than 2,000.

Most of the cans are sold with the labels lithographed upon the tin in one or more colors, although paper labels are also used, especially upon articles for export to America. There are a number of factories that confine their work to the lithographing of labels upon the sheet tin, to be shipped to the canner for the further work of cutting and making into cans. The labels are so arranged on the sheet as to cause the least possible waste in cutting. These labels are usually of Japanese design, but generally have the name of the contents, manufacturer's name, and other data in both Japanese and English. They are executed in one or more colors, although those of three colors are the standard. Cans made with labels lithographed upon them cost, for the standard three-color 1-pound size 3.9 sen (0.0195 cent) each, in not less than 5,000 lots. This includes the designing of the label and making of the stone, as well as all other details of manufacture. To large consumers this price is shaded from 0.1 to 0.2 sen per can.

Those canners making their own cans pay the following prices for lithographing the labels on the sheet tin: One color, 1 sen ( $\frac{1}{2}$  cent) per sheet; two colors, 2.3 sen; three colors, 3.4 sen; four colors, 4.2 sen. The smallest order accepted is for 5 cases of tin of 112 sheets each.

#### LACQUERED CANS.

About 10 per cent of the cans manufactured on lithographed sheet tin are lacquered on the inside. These are used chiefly by the canned-crab packers. The lacquer mostly used is of Japanese manufacture and known as "yei sei kanzai." It is a comparatively new product, the invention of Prof. Kenichi Miyazaki, instructor of the fishery experiment station of Tokyo, which is under the Department of Agriculture and Commerce of the Japanese Government. After experimenting with various lacquers for the interior of cans for a number of years, he succeeded in making a lacquer about three years ago that he claims will successfully withstand the heat necessary for processing any character of canned foods without any tendency to crack, soften,

or peel off. He states that it has satisfactorily undergone various tests of acid, and that there is no action by concentrated sulphuric acid until after one and a half hours have elapsed. He also claims for it the quality of allowing any process of bending or crimping without showing cracks or breaks. This lacquer has been patented by him in Japan under the name "Yei Sei Kanzai," and is being manufactured and used to a small extent, principally in the cans used for the exportation of crab meat from the north of Japan. He has made arrangements with two Japanese firms for the manufacture of lacquered tin plate and cans, one known as the Shimakami Shoten, with officers at No. 30 Gofu ku cho bashi Soto, Tokyo, Japan, and a small factory at Omori (address Machi Ichi-ban), which has the rights for the north of Japan. The Meikodo Shoten with main offices at Honjoku Midori cho nichome No. 23, Tokyo, Japan, and a factory at Osaka, has the rights for the south of Japan. The inventor has not parted with his rights for other countries, but stated that he expected to apply for patents in America. The manufacture in Japan is on a limited scale at present, and the use of lacquered cans is confined principally to crab meat, shrimp, and lobster, although they are also used for the Japanese pickle called fukujinzuke. Also the Japanese circular of the Shimakami Shoten (with a translation) showing what the company with the rights for the northern Japanese territory are advertising.

The following method of applying this lacquer is used: The lacquer is spread on a wooden slab with a wooden spoon. A hand roller made of gelatin, about 5 inches in diameter and the length of a sheet of tin, is run over the wooden slab covered with lacquer and then rapidly over the sheet of tin plate about 20 to 30 times in both directions. The tin is then placed in iron racks, holding 38 sheets each in an upright position, and placed in the drying room.

This drying room is a cement-lined room about 15 by 30 feet and 10 feet high. A slatted wooden floor is placed about 12 inches from the bottom cement floor, on which about 6 inches of water is kept. The room is fitted with wooden racks to hold the smaller iron racks of freshly lacquered tin. The temperature is kept at 59° to 68° F. with as near 70 per cent humidity as possible. When the humidity falls too low water is taken from the bottom and sprinkled on the side walls. In winter the temperature is kept as near the proper point as possible by means of a tin steam pipe about 4 inches in diameter running horizontally along the floor. The lacquered tin is left in the racks in this room for 12 hours, after which it is removed to a brick oven lined with sheet iron, where it is allowed to bake for 1½ hours at 150° F. It is then removed and is ready for shipment.

#### PRINCIPAL CANNING CENTERS.

The principal centers of canning in Japan are as follows: Nemuro, on the island of Hokkaido, and Chishima, in the Kuril Islands, for canned crab, salmon, salmon trout, and fish; Miyazu and vicinity on the western coast of the main island of Japan, for canned crab, shrimp, and fish of various sorts; Nagano in the western part of the main island, for fruit and vegetables; Tokyo, Omori, and vicinity, for

vegetables, pickles, and general canning; Hiroshima and Kure, in the southern part of the main island for meats, mushrooms, and general canning; Formosa for pineapple.

Canning plants are found, however, in all parts of Japan, there being 784 factories reported in the Government statistics, employing 2,672 male and 3,762 female workers, and having an output as follows: Beef, 6,659,695 cans, valued at \$631,880; fruit, 3,184,420 cans, valued at \$203,867; fish and shellfish, etc., 15,338,083 cans, valued at \$1,156,508; miscellaneous, 7,769,814 cans valued at \$493,027; total, 32,952,012 cans valued at \$2,485,282. This is an increase of approximately \$300,000 in three years.

The daily average wages paid by these factories is as follows: For boys under 14 years of age, 8 to 11½ cents; for girls, 6 to 8 cents; for men, 21½ to 50 cents; and for women, 12½ to 17½ cents. This is for a working day of 10 to 11 hours. It was stated in the Hiroshima factories that these wages were higher than formerly and that they were steadily advancing. The wages vary considerably according to locality, the higher rates being for labor in the cities of importance. The branch of the Tagasu Canning Co. in Chosen pays 15 cents a day for skilled male laborers and about 7½ to 9 cents for women.

Tin is purchased chiefly in England and costs \$8.35 to \$9 f. o. b. Kobe per box of 112 sheets 24 by 28 inches each. IC charcoal averages \$8.75 f. o. b. Kobe, and IC coke \$8.50 f. o. b. Kobe. The comment made by the owners of the large factory that furnishes goods for the Japanese Navy was to the effect that, judging from trials of American tin plate used several years ago, the amount of tin on the plate is not sufficient nor evenly applied; English tin plate is consequently preferred. This factory uses about 750 cases of tin plate per year at its plants.

Solder costs 4 yen per kwan (24 cents a pound). Paper labels cost \$1.15 per 1,000 in orders of not less than 10,000.

#### CRAB-CANNING INDUSTRY.

The exportation of crab meat from Japan has been increasing rapidly, as indicated by the following export statistics given by the Japanese Government:

Years.	Dozen cans.	Value.
1909.....	105,828	\$176,017
1910.....	201,732	364,395
1911.....	265,196	458,554
1912.....	401,502	690,581

Of this output, by far the largest proportion comes from the Kuril Islands nearest the island of Hokkaido, the principal factories being located on the island of Kunajiro (or Kunashiro). The factories on the western coast of the island of Sakhalin follow as second in importance, and the region along the western coast of the main island of Japan, including the Provinces of Tango, Echizen, Wakasa Tamba, and Tajima, is the newest and smallest of the crab-canning sections.

The species of crab meat found on the western coast of Japan is entirely different from that found on Hokkaido and Sakhalin, the latter species being *Ibara lithodes camschatcica* (Tilesius) while the species found on the western coast of Japan is the *inachus*. These crabs differ materially in size, the species found in Hokkaido frequently attaining a measurement of 6 feet from tip to tip of legs, while the species found on the western coast of Japan rarely exceeds 3 feet from tip to tip of legs. The Hokkaido crab differs from those found on the western coast also in having only 6 legs and 2 claws in place of 8 legs and 2 claws. The quality of the meat from the crab on the western coast is a little more delicate and the meat of the entire crab is used, whereas in the Hokkaido crab the meat of the legs only is used, the muscles of the body being discarded as too coarse.

The industry along the western coast of Japan has been developed to a large extent through the efforts of the Kyoto Fisheries Institute. Through this institution a number of canneries have been established, and while their activities are not altogether confined to the canning of crabs they have nevertheless placed considerable crab on the market and the amount is increasing annually.

The crabs found along the western coast of Japan are caught during the months of October, November, December, January, February, March, and April, the largest catches occurring during February and March. The catches during the winter are very irregular, owing to the severe weather experienced on the western coast. The crabbing is done at a distance of 12 to 40 miles off the coast in water having a depth of 50 to 130 fathoms. The nets used are known as flounder nets, and are trolled behind boats. They are large sack-shaped bags having an open mouth about 10 feet in length. The upper lip is supplied with a string of wooden strips each 18 inches long, while the lower lip is edged with small lead weights strung on a small rope. At each end of the jaws of this net a rope reinforced with wooden strips extends about 20 feet to the point where the rope leading to the boat is attached.

The fishing is done to a large extent in a very primitive manner in row or sail boats about 40 feet long, each boat being supplied with eight oars and a small mast that can be used when the wind is not too strong. The fishermen depend to a large extent upon the oars.

The lack of arrangements for drawing in the rope attached to the net makes this work very severe, particularly in rough weather, and the number of hauls that can be made in a day is necessarily small when the distance to the fishing grounds and the length of time necessary to pay out the line and draw in the net are considered. The catch seems to average 300 to 500 crabs per boat per day, a day consisting of 18 to 20 hours, including the time consumed in going and coming from the fishing grounds. These crabs sell at the cannery house at 3½ to 4 cents each, and as the crabbing can not be carried on continuously, day after day, on account of the distances and also frequently on account of the rough weather along this coast, the cannery establishments are not operated regularly even during the season. Crabs caught in this section weigh 8 to 32 pounds each.

At Taisa, a town of about 4,800 inhabitants, in the County of Tango, there are four small factories, with a total capacity of 1,500 to 2,000 cases of 48 cans each per annum. The work done in this small

fishing village is typical of that done along the western coast. The crabs are brought in during the night by the fishermen and are delivered in the early morning to the cannery houses. Only the largest crabs are utilized for canning, the smaller crabs and the shell and waste portion of the larger crabs being dried for fertilizers. Crabs taken from great depths do not live long. They have no power in their claws and the shell is brittle and can be easily broken with the finger nail. As a result, the majority of the crabs are more nearly dead than alive when they reach the cannery establishments. Live crabs are known by a certain bubbling at the mouth, for the legs are absolutely limp and show no signs of life. If not boiled immediately the flesh in the legs becomes watery, and the experiment station is recommending that pots be taken on board the fishing boats in which to cook the crabs as soon as they are taken from the water. This is done on the station's steam launch, upon which students are taught.

The cannery factories found in Taisa are small, occupying, as is customary in the majority of Japanese canneries, a portion of the owner's dwelling or being attached directly thereto. The space occupied by such a factory is about 60 by 30 feet and is kept fairly clean. The Japanese are usually very clean about their houses and persons, so that cleanliness is the rule in the cannery house, which is in reality a part of the dwelling. In one or two of these factories there was a cement floor, but dirt floors are found in the others. The equipment is meager. In the largest factories there is a steam kettle of Japanese make, but in the smaller plants there is only a large cauldron covered with a huge wooden tub to assist in the generation of steam. The students of the Kyoto Fisheries Institute are in the habit of gauging the temperature of the processing by the pressure from the steam kettle as indicated in pounds on the steam gauge, as it is usual to connect the pipe for the steam pressure gauge at the side of these open cauldrons with the wooden tub placed over the top as a means of generating the steam. It can be seen that the method of determining the temperature with this crude equipment is none too reliable.

Crabs are first placed in the large kettle about one-fourth filled with water and boiled 40 to 60 minutes. They are then taken out, and women and girls remove the shells and strip the meat from the claws, legs, and body with knives about 6 inches long by 2½ inches wide. From 20 to 40 women and girls are employed in these factories, ranging from 16 years of age upwards. They receive on an average 15 cents per day of 10 hours and 3 cents extra an hour for overtime. The more efficient men are hired by the month and receive \$7.50 to \$10 gold per month and board. They are occupied in making cans in the off-seasons.

After the meat has been removed from the shells it is placed in the cans, each can being weighed to see that the proper amount has been put in it. On an average one crab will fill from 1½ to 2 cans each. The tops are then put on the cans and they are placed in the kettle for one hour at a pressure of 3 to 5 pounds of steam (222° to 228° F.), or as nearly as that can be maintained with the crude equipment. The cans are then taken out, and after being vented and resoldered are once more placed in the kettle, remaining there for 1 hour and 20 minutes at 4 pounds pressure of steam (225° F.).

The crabs put up on the western coast are not put in cans lacquered in the interior, but the use of parchment paper in the interior is general. Inquiry was made as to whether there had been much trouble with blackening of the crab meat in this section, and it was stated that four years ago there was considerable trouble, but that this had been overcome by the use of what is termed "Shakusan," which is in reality a solution of acetic acid—1 part of glacial acetic acid to 24 parts of water. This is put into the cans in the proportion of 3 momme to 80 momme cans and 4 momme to 110 momme cans. One of the Taisa factories gave the formula used as 3 sho (4.764 quarts) of water, 1 go (1.2706 gills) of acetic acid, and 20 momme (0.165 pound) of salt. Two momme of this mixture is used in 80-momme cans and 3 momme in 110-momme cans. It was also learned that in the island of Sakhalin tartaric acid was used as a preservative to prevent the blackening of the crabs. The use of acetic acid is forbidden by the guild on the island of Hokkaido, where the greater proportion of the crabs are canned. The crabs from Taisa are sold largely through Kobe, the price being \$3.86 to \$4 per case of 80-momme (0.66 pound) cans and \$6.13 per case of 110-momme (0.91 pound) cans. They are packed 48 cans to a case.

#### SALMON INDUSTRY.

The canned-salmon industry that has been developed within the last few years in Kamchatka, Nicolaiefsk, Sakhalin, and in the Kuril Islands adjoining the northern island of Japan, may be divided into two classes: First, that developed by the Japanese to manufacture goods for the use of their navy and later for home consumption; second, that started later, principally in Kamchatka, by Anglo-Russian firms, and on a small scale by Japanese for export only.

Of the first class, the industry in Hokkaido and afterwards in Sakhalin was inaugurated by the Hokkaido Colonization Department, a local branch of the Government of Japan, which department carries on a fisheries experiment station and school on the island of Hokkaido similar to those at Miyazu (Kyoto Province), Nagasaki on the island of Kyushu, and Dairen (Dalm) in the Japanese leased territory in China, all of which are more or less supported by the local and central governments, although some are practically self-supporting. At the most of these experiment stations regular instructions to students are given, not only in fishery but also in canning fish and even in canning other than fishery products; and, in addition to this, experts are sent to various parts of the world to observe and learn foreign methods.

In 1908 the Japanese Hokkaido Government factory on Etorefu Island was taken over by Suhara Kakubei, a fisherman and a graduate of the fishery institute. In 1892 or 1893, Fujino Shirobei, from Osaka, who was interested in several fisheries in Hokkaido, started factories in Shibetsu and Bekkai, Nemuro Province, Hokkaido Island, and later Idzumi Shozu also started at Nemuro on the same island. These three canners were the only producers for a number of years, the output being small and being taken largely by the Japanese Navy, the surplus being shipped to various small points of consumption in Japan. Of late years, however, the demand in Japan has been increasing among the silk reelers, cotton spinners, and other factory

employees, as well as among the general consumers at points not directly on the seacoast and as a result the number of cannery factories in Hokkaido, the Kuril Islands, and in Japanese Sakhalin have been added to, while some of the canners of Japanese crabs have begun the packing of salmon and white trout in addition to crab meat. The largest proportion of the pack of fish in these Japanese factories has been white trout, however, and as there has been considerable complaint about the irregularity of the quality and some loss occasioned thereby, the Hokkaido local government has recently taken up the subject and allowed only the factories to operate that comply with certain regulations and have sufficient equipment. In this way it is hoped to effect greater uniformity of quality and to maintain a better reputation for the product. The older and larger of these factories have adopted some American machines of modern type, but the smaller and newer plants have begun with insufficient machinery, etc., in some cases the only equipment being the training gained in the fisheries experiment station school.

The following table shows the approximate output in 1912 of the canners of Japanese white trout and salmon in Hokkaido and adjacent islands (with the exception of 730 cases of red salmon packed by Kuroye Koyata, at Hakodate, the output is white trout):

Canners.	Location.	Cases.	Canners.	Location.	Cases.
Fujino Shirobei.....	Nemuro.....	30,000	Kuroye Koyata.....	Hakodate.....	730
Nemuro Kanzumo Kaisha.....	do.....	10,124	Hochino Sh. ten.....	Nemuro.....	716
Usugori Katsusaburo.....	do.....	8,562	Osumi Shoton.....	do.....	400
Aonoda Shokai.....	Hakodate.....	5,000	Mikami Shoton.....	do.....	385
Marusan-gumi.....	Nemuro.....	3,550	Kyodo Shokai.....	do.....	295
Kamoshige Shoton.....	do.....	3,100	Igarashi Kyuzaburo.....	do.....	150
Itsuboshi Kanzumo Kaisha.....	do.....	3,000	Yamamoto Sh. ten.....	do.....	131
Nakanobu Kinosuke.....	do.....	2,057	Hara Shoton.....	do.....	80
Idzumi Shozu.....	do.....	1,488	Okamoto Shoton.....	do.....	458
Shimazaki Shoton.....	do.....	1,305	Total.....		73,500
Aoyama Shoton.....	do.....	1,000			
Konishi Shoton.....	do.....	970			

The following figures show the approximate 1912 output of manufacturers on the island of Sakhalin, all of whom are Japanese: Aksaka Ichisaburo, at Aomori, 6,000 cases of white trout; Sasano Yei-kichi, at Hakodate, 3,000 cases of white trout; Oguma Koichiro, at Hakodate, 620 cases of white trout; Fukui Jujiro, at Hakodate, 500 cases of white trout. The output of canned crab meat was about 6,000 or 7,000 cases, so that the total output of the canneries was about 17,000 cases (810,000 to 820,000 pounds), valued at \$42,500.

Following is the 1912 output of the manufacturers in Kamchatka and Nikolaiefsk: Denbigh & Co., with headquarters at Vladivostok, 53,000 cases, of which 35,000 were red salmon, 10,000 pink salmon, and 8,000 white trout; Nippon Shokushin Kaisha, with headquarters at Tokyo, 8,200 cases of red salmon; Tsutsumi Shokai, with headquarters at Niigata, 6,200 cases of red salmon; Minaldi & Co., with headquarters at Vladivostok, 5,000 cases of red salmon; Sakai Sada-kichi, with headquarters at Hakodate, 2,400 cases of red salmon; Takahashi Sukeshichi, with headquarters at Niigata, 1,700 cases of red salmon; Hakama Shin-ichiro, with headquarters at Niigata, 700 cases of red salmon; Nakanobu Kinosuke, Ogawa Gomei Kaisha, and

Sakamoto Sakuhei, with headquarters at Hakodate, 800 cases of red salmon; in all, about 78,000 cases (3,744,000 pounds), valued at \$410,000.

In 1910, Denbigh & Co., an Anglo-Russian firm, with headquarters at Vladivostok and factories at Kamchatka, started the packing of salmon in tins. The enterprise has been undertaken in a systematic manner and on an entirely different scale from the Japanese factories already described. Sufficient capital has been invested to start the plant with modern machinery and equipment and the size of the plant indicates a determination to enter the export market now held principally by the American product.

The product put out by Denbigh & Co. is attractive in appearance and has apparently been satisfactory to those to whom it has been shipped, although in quality it is perhaps inferior to the American salmon. Of that exported to England much has been reexported to Italy and other countries.

Seeing the success of Denbigh & Co. and knowing that the quality of the Kamchatka salmon was greatly superior to that of the Japanese or Sakhalin fish, a number of Japanese canners from Hokkaido have established small factories in Kamchatka, where they can find an abundance of red salmon, and these firms have been disposing of their pack through Japanese merchants to England and Australia. The size of these Japanese factories and probably their lack of proper equipment may be the explanation of the variation in quality of the Kamchatka salmon. Denbigh & Co. planned to increase their 1913 pack, hoping to produce 100,000 cases during the season. Some of the Japanese manufacturers in Kamchatka were talking of purchasing American machinery and expending about \$50,000 in improvements. The total exports were larger in 1912 than in 1911, but the Japanese manufacturers with the smaller plants had some difficulty in disposing of their pack, and some were uncertain as to how to act in regard to the 1913 pack.

Quotations early in the year for Kamchatka salmon were about \$5.25 per case of 48 one-pound (flat) cans, and the Japanese white trout averaged about \$3.50 per case of 48 one-pound cans. The total output of red salmon and Japanese white trout in 1912 showed an increase of about 30 per cent over 1911. Of the Kamchatka product, the largest proportion has been sent to England and some to Australia. The portions of the Japanese pack not disposed of in England or Australia were either sent to Japan or have not been disposed of. The white trout of Japan and Sakhalin goes mostly to Japan, about one-third being taken by the Japanese navy.

The cost of salmon in Kamchatka is said to be about 6 cents per fish. The estimated cost of packing is as follows, per case: Material (fish) for 1 case of 48 one-pound cans, \$0.96; containers, boxes, etc., \$1.20; labor, \$0.96, this item varying according to the size of the factory and to the character of machinery used. The total average cost per case is thus \$3.12.

The cost of white trout in Japan is from 4.5 cents to 5 cents each, and the estimated cost of manufacture per case is \$2.90. A freight rate from Hakodate to England of 37½ cents per case has been obtained by one firm. The export of this Japanese white trout does not seem to be increasing, although the home consumption is growing.

## THE HIROSHIMA FACTORIES.

A general idea of the Japanese canneries may be had from a description of one or two typical factories. In the city of Hiroshima, in the southern part of the main island of Japan, are located 23 canneries, packing a variety of products. The following price list will indicate the principal products offered by one of the largest of these factories:

Articles.	Dozen cans to case.	Price per case.	Articles.	Dozen cans to case.	Price per case.
<b>MEATS.</b>					
Boiled beef:			SHELLFISH—continued.		
Special (misujini), round can.	4	\$6.25	Seasoned torigae, round can.....	4	\$3.75
No. 1 (yamatomi), round can.	4	4.90	Boiled oysters (kaki):		
No. 2 (yamatomi), round can.	4	4.40	Square can.....	8	6.25
Mirror brand, printed tin.	4	4.15	Round can.....	4	4.00
Mirror brand, No. 2, printed tin.	4	3.90	Boiled abalone (awabi), round can.....	4	6.00
Dragon-Fly brand.	4	3.40	Seasoned sazae.....	4	3.30
Dragon-Fly brand, ½-pound can.	8	3.75	Boiled scallop (hotategai), flat can.....	4	4.75
Dragon-Fly brand, ¼-pound can.	8	4.00	Seasoned akagae.....	4	3.35
Military style, 40-momme can.	8	3.60	Clams.....	4	3.40
Baked beef, flat can.....	5	6.25	Boiled shrimp (ebi):		
Beef with mushrooms:			Flat can.....	4	8.00
Round can.....	4	4.00	Flat can.....	4	7.00
Round can, ½-pound.....	8	4.25	Boiled crab:		
Chicken:			Flat can.....	4	9.00
Special (yamatomi), round can.	4	6.00	Flat can.....	4	7.00
Round can.....	4	5.50	Boiled hokkigori.....	4	4.00
Pork (yamatomi), round can.....	4	4.25	<b>PICKLES.</b>		
<b>FISH.</b>					
Roe of tai, round can.....	4	3.75	Fukujinzuke (mixed vegetable):		
Boiled salmon, flat can.....	4	3.25	No. 1, round can.....	4	2.65
Seasoned tunny fish:			No. 2, round can.....	4	2.15
Best, round can.....	4	3.50	No. 3, round can.....	4	1.80
Round can.....	4	3.15	½-pound can.....	10	3.25
Seasoned bonito.....			Seaseed (nori tsukudani):		
Seasoned herring:			Round can.....	4	3.00
Best.....			½-pound can.....	10	3.75
Second.....			Melon lees (wikasiruki).....	4	3.25
Cuttlefish.....			Leaf cayenne pepper (totorashii).....	4	3.25
Small octopus, round can.....	4	3.00	<b>VEGETABLES.</b>		
Pulverized tunny, 40-momme can.	10	3.05	Boiled bamboo shoots (takenoko),		
Seasoned kaze (gobius), square can.	6	4.25	3-pound round can.....	2½	2.40
Baked eel:			Boiled mushrooms:		
30-momme can.....	6	7.85	Matsutako.....	4	4.75
40-momme can.....		8.00	Shimeji.....	4	3.00
Marine eel.....	6	5.50	Boiled fuki:		
Seasoned urume (kind of sardine).....	6	2.60	3-pound can.....	2½	1.65
Seasoned sammia (mackerel pike).....	6	2.50	2-pound can.....	4	2.15
Futaboni:			Boiled lotus roots (hasu), 3-pound can.....	2½	2.15
No. 1, in caddy.....		1.90	Otafukumame (beans), round can.....	4	2.20
No. 2, in caddy.....		1.40	<b>FRUITS.</b>		
<b>SHELLFISH.</b>					
Baked torigae (cardum):			Mandarins, round can.....	4	1.65
Flat can.....	5	5.50	Pears, round can.....	4	2.05
Square can.....	8	5.75	Peaches, No. 2, round can.....	4	2.40
			Pineapple, 2-pound round can.....	3	3.65

The combined output of the 23 factories was stated to be only 1,000 cases per month. During the busy season the number of employees of both sexes ranges from 60 to 100 in the largest of these factories. The factory buildings are not large and rarely consist of more than two or three wooden structures, each about 30 feet square. The first of these is generally used as a preparation room, another as a processing room, and usually a third as a can-making department. The equipment for the preparation of various products is meager and of the most simple character, yet well kept and clean.

Little attention has been given conveniences that would be considered indispensable in larger and more modern establishments. In the processing, both open and closed kettles are used. A few closed kettles of German manufacture are found, but the majority are of Japanese manufacture. No exhausters of the American type are to be found in Japan, exhausting being accomplished by immersion in the open kettles for a short period and venting, after which the processing is completed in the closed kettles. One peculiarity of these kettles is that the temperature is determined only by means of the dial on the steam gauge attached, and it is usual to state that processing is done at so many pounds pressure—7 pounds pressure, for example, corresponding to  $233^{\circ}$  F. and 10 pounds pressure corresponding to  $240^{\circ}$  F. The uncertainty of such a method of determining the temperature with old gauges or ones not carefully tested is apparent.

In the can-making departments of these factories the greater part of the machinery is of the simplest type, mostly hand-operated machines for body cutting, curling, flanging, and even double seaming. Most of the machinery is of Japanese manufacture on old German models. In many of the factories cans are made by the older hand method of soldering with a simple soldering iron after the tin has been cut out and prepared by hand-operated machines. Most of these machines are secondhand and are found principally in the very small factories of beginners.

Several of the interesting products canned in these factories merit special consideration.

#### KUMQUATS.

The kumquat is a small citrus fruit well known in America and makes a very satisfactory product as canned in Japan. The fruit costs 3.50 yen per 10 kwan (\$0.021 per pound) delivered at the factory. After being sorted, washed, and the remaining stems picked off, they are thrown into an open kettle of boiling water until the fruit seems soft—from 3 to 5 minutes. The fruit is then placed in cans 4 inches in height and  $2\frac{1}{4}$  inches in diameter. Fifty-five momme (0.45 pound) of this fruit are placed in each can. This is then siruped to within one-half inch of the top of the can with sirup made according to the following formulas:

Special quality—1 sho (1.5881 quarts) of water to 400 momme (3.31 pounds) of sugar.

First quality—1 sho of water to 250 momme (2.07 pounds) of sugar.

Second quality—1 sho of water to 100 momme (0.827 pound) of sugar.

The cans are sealed and placed in the open processing kettles for about 5 minutes at  $212^{\circ}$  F. They are then vented, resealed, immersed again for one or two minutes in the open process kettle, and finally immersed in a tank of cold water.

The special quality sells for \$2.75 per case of 48 cans, the first quality for \$2.25, and the second quality for \$1.90.

#### MUSHROOMS.

A number of varieties of mushrooms are canned, but the favorites are called matstaki, or pine, mushrooms from the fact that they are gathered under the pine trees. The stalk is about 2 inches in

diameter and the cap about 6 inches. Only those not fully matured are used. Those canned at Hiroshima come largely from the Tamba district in the southwestern section of the main island of Japan, and must be delivered to the cannery on the day they are gathered.

The first operation is to peel off the skin from the cap and stalk. After grading into three sizes, they are boiled in an open kettle for 30 minutes at  $212^{\circ}$  F., after which they are placed in a vessel of fresh cold water, where they are allowed to remain over night. They are then placed in the cans and the cans are filled with water and placed in the closed process kettle and cooked at  $228^{\circ}$  F. for 20 minutes, when the temperature is raised  $235.5^{\circ}$  F. and the processing continued for 40 minutes, after which the cans are immediately vented, resoldered, and allowed to cool without further processing.

#### MEAT, PEAS, CHESTNUTS.

Meat, with soy sauce, called "yamatomi," is processed first for 50 minutes at  $228^{\circ}$  F. in the closed process kettle and then vented, resealed, and again processed for one hour at  $235.5^{\circ}$  F.

Peas are processed for 40 minutes at  $228^{\circ}$  F. They are not cooled in cold water after processing.

Chestnuts of the large Japanese variety are canned by several of the Hiroshima factories. One establishment packs 1,500 cases of 4 dozen cans each. They are cultivated largely in the Tamba district near Hiroshima. They are packed in 1-pound cans almost exclusively. Chestnuts cost 20 sen per sho (6.3 cents per quart) delivered at the factory. At the factory the hulls are removed by hand and the meats are placed in large kettles of warm water, the temperature of which is raised to the boiling point. The boiling is allowed to continue for 30 minutes, after which the water is drained off and the meats are then steeped overnight in slightly warm 30 per cent sugar sirup. In the morning they are placed in the cans, covered with a 35 per cent sugar sirup, closed and processed for 30 minutes at  $228^{\circ}$  F., vented, sealed, and reprocessed for 40 minutes at  $228^{\circ}$  F. A large proportion of the canned chestnuts are labeled with paper labels, although there are some put up in cans with labels lithographed on the tins. The best quality retail at  $12\frac{1}{2}$  cents per can.

#### BAMBOO SHOOTS.

The bamboo shoots canned vary from 3 to 6 inches in diameter, the smaller ones being of better quality. One concern stated that it packed 700,000 cans annually. At the factory the shoots are washed and boiled for 30 minutes in an open kettle. The outer leaves, or sheaths, are then removed until the tender inner section of the sprout is reached. These are sorted as to size and quality, cut into proper sizes, and placed in cans. Water is poured into the cans to within an inch of the top, and the cans are then closed and placed in the closed process kettle and heated at  $235.5^{\circ}$  F. for 50 minutes to one hour. They are then vented, resoldered, and once more placed in the closed process kettle at the same temperature for 20 minutes, after which they are cooled in cold water. The woody texture and lack of flavor of this eastern vegetable are not relished by the majority of foreigners who try it, yet among the Orientals it is highly favored.

## SHRIMP, PRAWNS, AND LOBSTER.

Crustaceans abound in the Japan Sea, along the coast of Chosen (Korea) and down the China coast into the Gulf of Chihli.

The lobster is *Palinurus japonicus*, in reality a large crawfish. It is caught on the Korean coast, and ranges from 12 to 18 inches in length, with antennae of about the same length. The average weight is 130 momme (1.07 pounds). Lobsters are sold for 2 to 3 sen (1 to 1½ cents) each.

The season for catching shrimp extends from April to August and there is short season during October and November. They are caught at a depth of 6 to 10 feet in trawl nets having a spread of 10 feet with a mesh of ½ inch. They are caught at night only, probably because the waters surrounding Japan are so clear that objects on the floor of the sea in 30 feet of water are as clearly visible as they would be in 3 or 4 feet of water elsewhere. They can not be caught on moonlight nights.

Immediately after delivery to the canneries, they are boiled for 10 minutes in an open kettle of plain water without the addition of salt. After blanching they are passed to the tables where women remove the heads and shells and other women pack the prepared shrimp in cans. At the best factories, the shrimp or prawns are inclosed in a thin cotton bag, which is placed in a can lacquered on the interior and lined with parchment paper. All of these precautions are taken to avoid the blackening of the food in the can. This discoloration is supposed to be caused by the phosphorus contained in the shrimp, and although it does not actually injure the product it does make it unsalable. All of the shrimp and prawns canned in Japan are dry-packed; that is, packed without the addition of salt water. After packing the cans and sealing the tops with double-seaming apparatus fitted with rubber ring gaskets, the cans are placed in closed process kettles and processed at 230.6° F. for 90 minutes. The cans are then vented, resealed, and again processed at the same temperature for 30 minutes. After the processing is complete the cans are cooled in tanks of cold water.

## TRADE IN FOREIGN CANNED GOODS.

The imports of American canned foods into Japan can be placed in two classes—condensed milk and canned foods of all other description. The imports of condensed milk into Japan in 1912 amounted to \$1,070,086, of which \$623,938 worth came from the United States and \$407,703 worth were from England. The imports of canned goods other than milk in 1912 were as follows: Vegetables and fruit, \$38,010, of which \$14,227 came from the United States, \$12,797 from France, and \$5,341 from England; canned meat, fowl, fish, etc., \$17,032, of which \$6,496 came from France and \$2,299 from Germany.

Statistics of exports from Japan to the United States show that even including the large item of condensed milk the United States is not selling a much larger quantity of canned goods to Japan than it is buying from that country.

The following table of the exports of canned goods from Japan for 1912 is furnished by the Japanese Department of Agriculture and Commerce:

	Total ex-ported.	Exported to United States.
Absalone.....	\$160,790	\$13,351
Crab meat.....	692,350	419,303
Fish:	7,190	.....
In oil.....	209,524	43,939
Other.....	76,549	41,040
Hash.....	156,583	51,192
Vegetables.....	92,023	19,886
Other canned goods.....		
Total.....	1,395,009	588,711

If the exports of crab meat to the United States and imports of condensed milk from the United States are disregarded there is a big balance in favor of Japanese canned products. This is accounted for by the fact that there are many more Japanese in America than Europeans and Americans in Japan. With the exception of condensed milk it is evident that the imports of canned goods from the United States into Japan are sold principally to the small foreign population. These foreigners include the officials of various Governments, missionaries, and business men and their families. Each nationality, of course, prefers the canned foods of its own country, but it is interesting to note that in spite of this division of the business, the United States obtains a larger share than any of the other countries.

The prospect of further extending American canned-food sales among these foreigners is not, of course, very bright. The increased demand resulting from any increase in foreign population will be handled through the present distributors. If there is to be any considerable increase in the sale of American canned foods in Japan, it must be to the Japanese themselves, and the fact is that large sales of American canned foods to the Japanese can be accomplished by only a most careful campaign along American lines readjusted to the conditions found in Japan. It is necessary to understand the conditions that have governed the sale of American canned foods in Japan in the past. Following is a quotation of Mr. R. Ichinomiya's views on the difficulties of foreign trade, as published in "Japan and Japanese-American Relations":

The primary and perhaps most serious difficulty lay in the ignorance of the foreigner and Japanese of each other's language and customs. Merchants, whether Japanese or foreign, could not, except in the rarest instances, confer with each other on business matters directly and were compelled to employ special clerks, generally Chinese, as interpreters. The one aim of these men was to obtain the commission on the business done through their offices, just as now in the open ports of China, so that it was but natural that they should be indifferent to the development of trade. The only alternative was that one of the parties, either the foreigner or the Japanese, should learn the other's language, trade customs, and needs, and in this respect it would seem that the Japanese have taken the initiative. This tendency to do away with the middleman was extended to the "accidental" merchants residing in Japan in so far as many of them were simply intermediaries between the real importers and exporters and not between the producers and consumers. They had little or no experience in actual trade and usually lacked capital as well, but in the primitive stages of foreign trade they could get along nicely.

To grasp the full meaning of this, it is necessary to realize that these commission men in Japan are agents for all sorts of goods; in fact several boast that they carry every line from a knitting needle to a locomotive. While it may not apply so largely at present as it did in the past, still it is a fact that many of these commission merchants lacked capital and for this reason were obliged to limit the office force employed. The natural outcome of an attempt to sell a large variety of products with a very meager force of men was that efforts were directed only to supplying the natural demand, and where any exploiting was possible it was confined to those products for which there seemed the most favorable prospects and attractive profits. This is not meant as a reflection on the commission merchant; he could follow no other method, and from the standpoint of the manufacturer no more economical method of making a beginning could be found, but the goods needed to be of a character which would sell readily. Canned foods were only ready sellers to the limited amount required by the foreigners in Japan. The only exception has been condensed milk, and the extent to which this article has found sale among the Japanese themselves is worthy of study, and will be treated further on in this report. In order to arouse the interest of the commission merchant, some American canned-goods manufacturers have made sole-agency contracts with certain commission merchants for the whole of Japan, and while this plan is necessary to justify the commission merchant's efforts in promoting any particular commodity, it has not proved of much value so far as the general line of canned goods is concerned. In some cases the manufacturer allows his commission agent an advertising fund, but since this is usually small and as advertising is an art in itself and calls for special study in a foreign country, no great results are obtained by this means as now carried on.

During the last few years a certain amount of direct dealing between purely Japanese firms and American canned-food concerns has developed, thus to a certain extent cutting into the earlier business of the commission men. There are a number of Japanese wholesale and retail merchants who are endeavoring more and more to eliminate the foreign commission men of Yokohama and Kobe, and with some success. In the larger cities there are to be found English, American, and Japanese groceries that carry American canned goods. The most of these are in Yokohama, Tokyo, and Kobe, and all of these stated that their business was confined mostly to the foreign element in Japan, with a small amount going to the upper classes of Japanese. All of these merchants agreed that the high cost of foreign canned foods, caused by the Japanese tariff imposed, limited the use of such goods by Japanese.

The following table of retail prices will give an idea of the cost of foreign canned goods, in some cases contrasted with the cost of the native product:

Articles.	Price.	Articles.	Price.
CONDENSED MILK.			
Nestle's:			
Tin.....	\$0.13	Jam:	
Dozen tins.....	1.55	Apple, plum, gooseberry, currant, and raspberry (English), 1-pound tin.....	\$0.21 $\frac{1}{2}$
Eagle Brand:		Strawberry and apricot (English), 1-pound tin.....	.25
Tin.....	.16 $\frac{1}{2}$	Pineapple (English), 1-pound tin.....	.25
Dozen tins.....	1.95	Orange marmalade (English), 1- pound tin.....	.32 $\frac{1}{2}$
Carnation cream:		Strawberry, orange, and fig (Ja- panese), 1-pound tin.....	.12 $\frac{1}{2}$
Tin.....	.13	Apricot and strawberry (French), 1-pound tin.....	.50
Dozen tins.....	1.65	Apple butter (American), per tin.....	.25
Small tin.....	.07		
Dozen small tins.....	.80		
Bear brand (unsweetened milk):			
Liter tin.....	.13 $\frac{1}{2}$	MEAT AND MEAT PRODUCTS.	
Dozen liter tins.....	1.50	Potted meats:	
Ho-o (Japanese), per tin.....	.12 $\frac{1}{2}$	Ham, chicken, and tongue (Eng- lish), 1-pound tin.....	.17 $\frac{1}{2}$
		Ham and beef (American), 1-pound tin.....	.12 $\frac{1}{2}$
		Turkey and chicken (American), 1- pound tin.....	.20
FISH.			
Anchovies:		Sausage:	
In oil (French), long bottle.....	.67 $\frac{1}{2}$	Frankfurter, 1-pound tin.....	.22 $\frac{1}{2}$
In salt (French), long bottle.....	.50	Vienna, 1-pound tin.....	.12 $\frac{1}{2}$
Paste (English), 4-ounce glass.....	.20	Vienna, with tomato sauce, 1-pound tin.....	.12 $\frac{1}{2}$
Essence (English)—		Oxford (English):	
Small bottle.....	.17 $\frac{1}{2}$	Small tin.....	.42 $\frac{1}{2}$
Medium bottle.....	.37 $\frac{1}{2}$	Large tin.....	.75
Caviar:		Mainzer (German):	
Unpressed (American)—		4 pieces, per tin.....	.45
1-pound tin.....	.45	8 pieces, per tin.....	.62 $\frac{1}{2}$
1-pound tin.....	.87 $\frac{1}{2}$	Leberwurst (German), per tin.....	.67 $\frac{1}{2}$
1-pound tin.....	1.50	Zungenwurst (German), per tin.....	.67 $\frac{1}{2}$
Salmon:		Sardellen-leberwurst (German), per tin.....	.77 $\frac{1}{2}$
American, 4-ounce tin.....	.85		
English, 4-ounce glass.....	2.00	Tongue.	
Russian, 4-ounce tin.....	1.25	Lunch (English), 1-pound tin.....	.42 $\frac{1}{2}$
Herring:		Sheep (English), 1-pound tin.....	.20
With tomato sauce, flat oval tin.....	.22 $\frac{1}{2}$	Lamb (English), 1-pound tin.....	.22 $\frac{1}{2}$
Kippered, flat oval tin.....	.30	Ox—	
Lobster:		1½-pound tin.....	.82 $\frac{1}{2}$
Potted (English), 4-ounce glass.....	.20	2-pound tin.....	1.00
Curried (English), small tin.....	.37 $\frac{1}{2}$		
Salmon:		Bacon:	
Red (Alaska), 1-pound tin.....	.22 $\frac{1}{2}$	Sliced, cooked (English), 1-pound tin.....	.45
Boiled, 1-pound tin.....	.11 $\frac{1}{2}$	Sliced, uncooked (English), ½-pound tin.....	.27 $\frac{1}{2}$
Sardines:		Beef extract (American), small jar.....	.55
In oil (French)—		Bovril (English extract):	
Small tin.....	.22 $\frac{1}{2}$	2-ounce bottle.....	.42 $\frac{1}{2}$
Medium tin.....	.30	4-ounce bottle.....	.75
Large tin.....	.50	8-ounce bottle.....	1.25
In oil (Japanese)—		Hash:	
Medium tin.....	.10	Corned beef—	
Large tin.....	.17 $\frac{1}{2}$	1½-pound tin.....	.24
		1-pound tin.....	.27 $\frac{1}{2}$
FRUIT AND FRUIT PRODUCTS.			
White cherries:		Roast beef—	
Rose brand (American), 2½-pound tin.....	.22 $\frac{1}{2}$	1-pound tin.....	.17 $\frac{1}{2}$
Our Flag brand (American).....	.32 $\frac{1}{2}$	½-pound tin.....	.27 $\frac{1}{2}$
Cutting brand (American).....	.40		
Getz brand (American).....	.42 $\frac{1}{2}$	Dried beef, chipped, ½-pound tin.....	.19
Japanese, 2½-pound tin.....	.25	Corned beef, 1-pound tin.....	.24
Peaches:		Brawn (English), 1-pound tin.....	.20
Rose brand, 2½-pound tin.....	.22 $\frac{1}{2}$	Hamburger steak with onions:	
Our Flag brand.....	.30	½-pound tin.....	.17 $\frac{1}{2}$
Cutting brand.....	.35	1-pound tin.....	.27 $\frac{1}{2}$
Getz Best brand.....	.40		
Japanese, 2½-pound tin.....	.17 $\frac{1}{2}$	Boneless chicken (American), ½-pound tin.....	.42 $\frac{1}{2}$
Pears:		Boneless turkey (American), ½-pound tin.....	.42 $\frac{1}{2}$
Rose brand, 2½-pound tin.....	.22 $\frac{1}{2}$	Curried fowl (English), 1-pound tin.....	.47 $\frac{1}{2}$
Our Flag brand.....	.32 $\frac{1}{2}$		
Cutting brand.....	.35	SOUPS, SAUCES, ETC.	
Getz Best brand.....	.42 $\frac{1}{2}$	Assorted soups (English), 1-pound tin.....	.35
Apricots:		Assorted soups (American firm), 1-pound tin.....	.20
Rose brand, 2½-pound tin.....	.22 $\frac{1}{2}$	Tomato soup (another American firm), 1-pound tin.....	.17 $\frac{1}{2}$
Our Flag brand.....	.30	"Hurrath" beef-tea cubes:	
Cutting brand.....	.35	Box of 12.....	.22 $\frac{1}{2}$
Getz Best brand.....	.42 $\frac{1}{2}$	Box of 25.....	.50
Pineapple:		Box of 50.....	.95
Hawaiian, 2½-pound tin.....	.22 $\frac{1}{2}$		
Taiwan (Formosa), 2½-pound tin.....	.17 $\frac{1}{2}$		
Singapore—			
Whole, 1½-pound tin.....	.19		
Whole, 2-pound tin.....	.24		
Whole, 2½-pound tin.....	.29		
Cubes, 2-pound tin.....	.29		

Articles.	Price.	Articles.	Price.
<b>SOUPS, SAUCES, ETC.—continued.</b>			
Tomato catsup:		<b>VEGETABLES—continued.</b>	
American, 4-pint tin.....	.30-.22	Beans:	
Japanese, 1-pint tin.....	.05-.07	Baked (American)—	
Tobasco sauce, per bottle.....	.50	Small tin.....	.30-.15-.17
Cranberry sauce, per 1-pound tin.....	.35	Large tin.....	.22½-.27½
Pickles:		Pork and beans—	
English, pint bottle.....	.30	1-pound tin.....	.12½
French.....	.20	2-pound tin.....	.20
American sweet pickles, 14-ounce		Lima, 2-pound tin.....	.20
bottle.....	.45	String, 1-pound tin.....	.19
American sour pickles, 14-ounce		Sucotash, 2-pound tin.....	.19
bottle.....	.42½	Haricole vert (French), No. 1.....	.27½
American chow-chow, 14-ounce bot-		Flageolets (French), No. 1.....	.25
tle.....	.37½	Cauliflower (French), No. 1.....	.25
American India relish, 14-ounce bot-		Celery (French), No. 1.....	.25
tle.....	.45	Mushrooms (French):	
Sweet mango chutney, pint bottle.....	.27½	½-bottle.....	.17½-.20
Imperial peanut butter, per jar.....	.27½	No. 1 bottle.....	.30-.37½
<b>VEGETABLES.</b>		Choice, No. 1 tin.....	.22½
Artichokes (French), 1-pound tin.....	.62½	Peas (French):	
Asparagus:		Medium, 1-pound tin.....	.12½-.17½
American, 2½-pound tin.....	.42½-.50	Small, 1-pound tin.....	.20
French.....		Small, ½-pound tin.....	.14
1-pound tin.....	.40-.47½	Very small, 1-pound tin.....	.25
2-pound tin.....	.75-.87½	Extra small, 1-pound tin.....	.30
		Sugar corn (American), 2-pound tin.....	.19
		Tomatoes (American), 2½-pound tin.....	.17½-.20

**MARKET FOR CONDENSED MILK.**

Japan and China are countries whose great populations have existed and increased without one of the articles of diet that to Americans seems an elementary food—milk. There is practically no production of milk in either of these countries, the only supply being imported from foreign countries in the form of condensed milk in cans.

It is not to be wondered at that no milk is produced in Japan—there is no land that can be spared for cattle raising. Why the Chinese should have done without milk is more difficult to understand. There are large sections of China too highly cultivated and too densely populated to allow the pasturage of cattle, although even in these sections the water buffalos are kept as draft animals, but there are numerous other sections in which cattle raising could easily have flourished.

Cattle and sheep are raised extensively in the northern Provinces, especially in Mongolia and in Manchuria, but, strangely enough, not at all for milk. There may be a possible explanation in the diseases that destroy the cattle at frequent intervals, and another in the fact that as milk is easily contaminated it was forced into the list of articles of food and drink to be avoided. For example, plain water is in this class and no Chinese will drink unboiled water, because he has learned that disastrous results are certain to follow. Consequently he takes his water either hot or, more commonly, in the form of a weak decoction of tea, without sugar or milk. A teapot is part of the equipment of each room of all houses and offices; in fact, the teapot is found even on the boats of the fishermen.

The inquiry at once suggests itself, What provision is made for the children? The problem of raising children in a country where the dairy is unknown is greatly simplified by the fact that Japanese mothers suckle their children for a much longer period than is usual

in western nations; in fact, it is not unusual to nurse them until the third or fourth year. From that age on through life the Japanese have been accustomed for centuries to live without milk.

The Chinese have a somewhat different attitude toward children, for to them the boys alone are important; the girls are regrettably received, or, in some sections, frequently disposed of at birth. Mothers thus deprived of their girl babies furnish milk to boy babies in other families where needed. Large families of children are usual all over China and there is a high infant mortality. The statement is made that in Hongkong, where the English authorities have endeavored to keep statistics, only 72 children in a thousand survive the first year.

Having thus done without milk for centuries it would seem a difficult matter to induce the Chinese and Japanese to use condensed milk, but when the foreigners began to import it for their own use the product seemed to appeal at once to the Japanese and also to the Chinese, although apparently not to the same extent. This may be accounted for by the fact that the Chinese have not changed so rapidly as have the Japanese since their contact with western nations. Condensed milk has become an important article of export from America to these two countries, and while it is astonishing how far back into the country it has penetrated, largely on its own merits and with only a trifling amount of advertising, the field could be developed to a much greater degree if actually managed on American lines and unquestionably (especially in China, where the market has only been "scratched") offers attractive returns for such efforts.

Sales are made through representatives or commission agents of recognized standing, either European or American, who have opened offices in some large distributing center. In most cases these firms have not been American and they have usually handled all kinds of European and American manufactures from the aggregate commissions on which they have made comfortable incomes. As most of these firms have started with very large capital, naturally they are interested principally in the most profitable articles or the articles in greatest demand no matter what the country of origin. They can not be expected to show any special desire to push the sale of American goods in preference to others; in fact, the American system of selling for cash, often f. o. b. New York or San Francisco, has discouraged any attempts to handle great quantities unless there was to be a correspondingly greater percentage of profit. This system makes it necessary for the agents to use their own capital or their credit with the banking houses, whereas the European houses often assist them through liberal terms and long credit. As a perfectly natural result these houses frequently preferred to push European goods, although they gladly handled American articles for which there was a natural demand on American terms. Such a demand exists for condensed milk, which is used by foreigners and natives alike. America seemed better equipped to furnish this article at the outset than any other country, and consequently the business was for the greater part American. In some cases the representatives have been allowed a small advertising fund by the American manufacturer, but in the hands of a firm with a comparatively small organization occupied in selling many different characters of goods, such funds have not resulted in systematic advertising of any great value in introducing

a practically new article to people unfamiliar with its merits. The use of these existing commission agents in foreign countries has probably been the easiest and safest way to develop the trade in the beginning, because such firms or representatives were on the ground, were in touch with customers, and usually paid cash, but if there is to be any further development of this business, or even the retention of what has already come to America, a more comprehensive plan will have to be adopted.

#### CONCLUSION.

On account of the protective tariff imposed by Japan on canned foods from foreign countries, the low cost of food in Japan and the character of the food demanded, this market does not at present offer very attractive possibilities for the sale of American canned foods in increasing quantities. The growth of the business in condensed milk in Japan warrants the belief that there might be a chance for other products, possibly cakes, crackers, American cereals, or other foods suited to the Japanese meals. Smaller packages for the Japanese would undoubtedly be more popular, and some information in Japanese characters on the label should facilitate the sale in the more remote sections, although this is not so important as in China. No harm would be done by the use of such labels, however, in addition to the original label. Wrappers with receipts for cooking printed in Japanese characters might possibly be helpful.

An advertising campaign by an individual packer would probably not be justified. Only the most careful study of the products that might be pushed and of the American ideas in advertising that could be adapted to Japanese conditions will suffice, and if the combined efforts of several manufacturers of such articles could be joined in exploiting such goods the effort might be justified. The results of the campaign started by the Anglo-Swiss Milk Co. by the establishment of branch offices in Japan will be interesting in this connection.

#### SIAM.

##### INTRODUCTION.

Judging from the following statistics of exports of canned foods from the United States to Siam, the market is not one of great possibilities, and yet the business in canned goods is much greater than American exports indicate:

Articles.	1908	1909	1910	1911	1912	1913	1914
Canned salmon.....	\$282 3	\$1,025 1	\$93 4	\$147 5	\$143 14	\$2,208 462	\$60 19
Canned fish, other than salmon or shellfish.....							
Oysters.....							
Canned fruits.....	1,111 63	655 139	628 155	1,043 61	855 213	462 220	1,538 201
All other preserved or prepared fruit.....							
Canned beef.....							
Canned pork.....							
All other canned meat products.....	281 6	1,437 100	480 399	224 356	635 704	1,323 481	631 696
Canned milk.....							
Canned vegetables.....	2,464 15	100 625	399 267	356 261	615 586	597 599	696 373
All other, including pickles and sauces.....							

As many merchants, particularly the Chinese, purchase goods in Singapore, the foregoing table does not show all the imports from the United States, particularly in the case of canned salmon.

The supplies of canned foods are furnished largely by European manufacturers, and the greater proportion is sold in Bangkok, the capital and principal city, having 630,000 inhabitants, where practically all of the foreigners in Siam reside. The wealthy class of Siamese and also a large number of Chinese use canned foods in growing quantities. There are approximately 200,000 Chinese in Bangkok.

Goods are purchased by large importing houses dealing in every character of commodities, and these firms are German, English, or Danish, Siam being the only far eastern country where the Danes exert any great influence. A large Danish company (the East Asiatic Co.) operates a line of vessels between Siam and Denmark, and owns and operates the largest wholesale and retail department store in Bangkok. The supply of groceries carried by this house is almost entirely of European origin, and only those American products are in evidence that are manufactured by firms who have sent representatives from America to establish agencies in the Far East. The English and other European firms that control the market for canned foods regularly send traveling salesmen to obtain and hold the trade. One of the representatives of an English firm stated that he had made this far eastern trip annually for the last 10 years.

The Anglo Swiss Condensed Milk Co. has practically absolute control of this market, and with an agent on the ground is intrenching itself securely. A large amount of advertising is in evidence, all of the street-car lines of Bangkok carrying signs advertising the "Milkmaid Brand."

An encouraging sign of American progress in certain lines is shown by a typewriter company that has built up a large business by manufacturing machines with Siamese characters. Although English is generally spoken and read among the higher classes, it is necessary to use the native languages to reach the masses in Siam.

In the case of canned foods, no large market is likely to be developed outside of Bangkok itself. In order to obtain a larger proportion of the business there and to increase the use of canned foods from the United States, the representatives of American firms will be obliged to visit this section periodically. The possible sales of any particular products at present would hardly justify the trip to Siam alone, but if there were a representative in Singapore for a number of canned-food manufacturers of different lines, he could cover all of the countries for which Singapore is a distributing base.

That the Siamese recognize the value of canned foods may be inferred by the establishment of a factory for canning Siamese fruits in Bangkok. A description of this factory has been given in the report on canned pineapples (Special Agents Series, No. 91).

This factory is probably the first to attempt the canning of the mango, papaya, Jack fruit, durian, shampoo, and some other purely tropical fruits. Jams, chutneys, and other preparations have been manufactured in India and at other points, but the success attained in merely canning such fruits as the mango and papaya will probably open broader fields for these fruits, which are too perishable to ship

in the fresh state. The canned papaya in particular should meet with success.

#### THE PAPAYA AND ITS USES.

The fruit of the papaya, or papaw, tree has always been a favorite breakfast dish with travelers in tropical regions, generally as much for its digestive qualities as for its lusciousness. It contains a digestive ferment, papain, which has long been known favorably as an alternate to pepsin. Among orientals, particularly in southern India and Ceylon, the digestive qualities of the papaya are so well known that the fruit is almost universally used, and undoubtedly with great effect, in preventing dyspepsia. There are several varieties of *Carica papaya*, and the papain varies accordingly. The Bangkok Canning Co. makes a specialty of two kinds of canned papaya—ripe with sirup, like ordinary canned fruits, and green, as a vegetable, like vegetable marrow, in 1½ and ¼ pound tins. Papain is also manufactured by this company.

The digestive and disintegrating properties of papain are remarkable. The milk and even the fresh leaves of the papaya tree will render the toughest beef tender in two hours. Native cooks invariably wrap tough raw beef with the fresh leaves for half an hour, or apply a small quantity of the fresh milk directly to its surface, or put a piece of the green fruit into the raw curry when the beef will not boil soft. If a large quantity of the juice is applied to the raw beef, it reduces it in a little over half an hour to a pulpy mass that appears as if it had undergone partial digestion. Papain is said to be capable of digesting ten to twelve times its weight of egg albumen at the temperature of the human body. There are many other uses for papain. It acts gently but effectively upon the liver and bowels, and is said also to remove freckles. It is frequently used by the natives of Ceylon as a soap. From its power to remove stains in clothes papain is called "melon bleach" by the Singhalese, and they use it in the water when washing colored clothes, especially black, which it seems to intensify. In the West Indies it is used as a cosmetic, and is said to produce clear satiny complexions.

The milk or juice of the fruit is dried by the Bangkok Canning Co. by their own process, and put up in 1-ounce and 1-pound bottles.

#### Straits Settlements.

##### INTRODUCTION.

The importance of the English colony of the Straits Settlements is out of all proportion to its size. These settlements are principally small areas on or adjacent to the Malay Peninsula and the Straits of Malakka. The total area is only 1,600 square miles and the population in 1911 was 714,069, composed largely of Chinese from Amoy, Swatow, and other southern China ports.

The Straits Settlements, of which Singapore, on the small island of Singapore, at the southern extremity of the Malay Peninsula, is the capital and principal port, derive their importance not only from their location on the chief thoroughfare for through oriental traffic—the Straits of Malakka—but also from the fact that the Federated Malay States and other independent Malay States are under the British sphere of influence and protection.

The chief exports are gutta percha, gambier, pepper, india rubber, sago, tapioca, spices, copra, rattans, tin, and preserved pineapple. The chief imports are rice, cotton, piece goods, opium, petroleum, and coal.

The imports of canned foods are not relatively large, and the only really important American product of this kind imported is canned salmon, as may be judged from the following table, which contains statistics of exports from the United States to the Straits Settlements compiled by the United States Bureau of Foreign and Domestic Commerce:

Articles.	1908	1909	1910	1911	1912	1913	1914
Canned salmon.....	\$43,109	\$60,306	\$76,285	\$104,931	\$67,317	\$116,365	\$90,292
Other canned fish.....	19	58	110	74	15	30	671
Oysters.....	19	.....	.....	.....	15	74	98
All other shellfish.....	61	98	71	152	17	.....	506
Flavoring extracts and fruit juices.....	15,912	10,868	12,827	14,212	25,797	19,797	33,383
Canned fruits.....	544	5	17	145	190	408	408
Fruits—all other preserved or prepared.....	8,715	8,873	6,519	3,979	2,084	210	46
Canned meat.....	1,308	236	3,702	415	2,832	6,570	4,330
All other canned meat products.....	7,173	4,719	2,180	1,472	1,887	1,883	1,603
Condensed milk.....	3,907	1,139	4,199	4,571	7,291	6,437	15,296
Canned vegetables.....	806	4,040	731	1,468	2,069	6,886	3,051
All other canned goods, including pickles and sauces.....	.....	.....	.....	.....	.....	.....	.....

##### CANNED SALMON.

The explanation of the demand for American canned salmon is as follows: Of late years there has been a boom in rubber planting on the Malay Peninsula. Singapore is the chief city and distributing center of this section, and when the question is put to the importers of Singapore as to why canned salmon is imported into the Straits Settlements in such quantities, the answer invariably is: "The Chinese coolies on the rubber estates." This is a most important point in connection with the development of a market for canned goods in China; it warrants the cooperation of every packer in the salmon industry in the United States. Here is a canned food that appeals to the taste of the Chinese coolie—the laborer and the poorly paid laborer at that—and the statistics of American imports do not tell the entire story, as heavy imports of canned salmon are made from England. Unfortunately, the official statistics do not separate canned salmon from other fish products, but the presence of salmon bearing English labels of large Liverpool and London firms proves that England has a share in the trade. Undoubtedly some of this English salmon came originally from American canneries on the Pacific coast, although the price lists of the leading retail houses of the Straits Settlements do not mention American canned salmon. These English brands are of the better grades usually and sell for 34 to 40 cents gold per 1-pound can and 19.8 cents gold per half-pound can.

The large consumption of canned salmon by the Chinese coolies on the rubber estates is a matter of more than passing interest. These coolies come in large numbers from Amoy, Swatow, and other parts of southern China, as they are considered reliable for the work of clearing land for new rubber plantations and for the cultivation of the young trees after planting. This class of labor is most satis-

factory throughout tropical countries, as the Chinaman is a capable and honest worker no matter under what condition he is obliged to labor. The Chinese also work in the tin mines in the Malay States and on the islands of Banka and Billiton near by, which are part of the Dutch East Indies.

As suggested before, the fact that the coolie class of Chinese has shown a natural liking and thereby created an unsolicited demand for canned salmon, indicates that if the natives of the great inland sections of China could be made acquainted with canned salmon the demand would undoubtedly extend to such points. Amoy and Swatow, from which these coolies emigrate and to which they periodically return, are already familiar with the product, as indicated by the fact that the imports of canned salmon are greater at Hongkong, the distributing port for those cities, than for the rest of China, but as the male population of Amoy and Swatow is at work in Singapore, Sumatra, Siam, etc., for the greater part of the year, the consumption of canned salmon can not be so great as it would be otherwise. Even if the consumption should be increased at these points, it does not follow that the knowledge of sa'mon will spread throughout China from them, for they are not connected by rail with the back country. The only practical plan of introducing salmon into the interior of China is by an organized campaign, and if this is neglected too long the Japanese and Kamchatka "chops" of salmon may capture the market permanently.

That American salmon packers should cooperate more thoroughly is also evidenced by the cutting of prices. Attention was called to this competition among American exporters by a number of the English and German importers in Singapore. One importer stated that he had been able to make a much larger profit by taking advantage of the many American quotations. The business of the Straits Settlements is entirely in the hands of the English except for those German firms that have branch offices in Singapore. With the exception of the salmon and some California fruits, American canned foods are little known. As the Straits Settlements is an English colony and the Federated Malay States and other independent states of the Peninsula are under English influence it is only natural that those brands of English canned goods familiar at home should have the best sale here. Hence, at the retail houses practically all of the goods in stock bear the name of E. Morton, Cross & Blackwell, Lazenby, or some other well-known English firm. Representatives from these firms visit Singapore and other Far Eastern points regularly to make sales. The Dutch, on account of direct shipping facilities afforded by the lines from the Netherlands to Java and Sumatra, have made some headway in placing canned meats and condensed milk.

#### TRADE IN CONDENSED MILK.

A surprising feature of the trade in condensed milk is the demand for the Italian product.

The following table shows the imports of condensed milk into the Straits Settlements in 1912 and incidentally reveals the unimportant part played by the American article (Straits Settlements dollar = \$0.5677):

Countries of origin.	Singapore.		Penang.		Malakka.	
	Cases.	Value, S. S. dol- lars.	Cases.	Value, S. S. dol- lars.	Cases.	Value, S. S. dol- lars.
<b>British Empire:</b>						
Europe.	7,700	42,233	2,368	13,454	265	2,423
Hongkong	300	2,350				
Canada.	1,000	5,000				
Australia.	920	8,251				
<b>Europe:</b>						
Austria-Hungary	280	1,400				
Belgium	1,060	7,400	2,431	10,338		
Denmark	188	1,024	4	20		
France	13,320	94,564				
Germany	16,805	109,262	18,018	121,572		
Italy	155,705	1,389,339	76,224	705,108		
Netherlands	24,271	125,717	9,972	51,693		
Norway	14,775	85,625	1,465	8,225		
<b>United States:</b>						
Atlantic coast	248	1,434				
Pacific coast	100	500				

The distribution of the reexports of condensed milk from Singapore and Penang in 1912 is shown in the table that follows:

Reexports to—	From Singapore.		From Penang.	
	Cases.	Value, S. S. dol- lars.	Cases.	Value, S. S. dol- lars.
<b>Borneo:</b>				
British North Borneo	1,904	18,513		
Sarawak	1,761	17,896		
	480	2,833		
<b>Hongkong:</b>				
<b>Malay Peninsula:</b>				
Jehor	5,010	48,989		
Kelantan	2,192	19,860		
Tringanu	676	6,062		
Negri Sembilan	9,271	90,887		
Pahang	3,597	33,762		
Perak	10,695	106,647	34,772	330,891
Selangor	10,638	100,896	5,183	47,928
Kedah			1,126	10,691
<b>Dutch East Indies:</b>				
Achen	38	350	711	7,430
Bali and Lombok	85	888		
Borneo	2,301	23,484		
Celebo	703	6,583		
Java	115	1,076		
Moluukas	58	595		
Nature	1,381	14,299		
Riow	1,096	11,139		
Sumatra—				
East coast	2,446	23,092		
West coast	46	475		
Other	4,757	49,070		
Siam	6,772	40,754		
East coast of Siam	685	6,758		
West coast of Siam			2,644	24,457

The large sales of condensed milk from the north of Italy are interesting as showing what opportunities there are even in countries where English influence is strong. The campaign of the Anglo-Swiss Condensed Milk Co. in Singapore has been pushed energetically, however, in the last few years and the foregoing figures are likely to show considerable change before long. This company is making five-year contracts with the retail merchants providing for the exclu-

sive handling of the Anglo-Swiss brands of milk. Special discounts and inducements are offered to those prominent retail stores that have the greatest trade.

#### DIRECT REPRESENTATION.

American manufacturers of canned foods can not expect to develop a trade with the Straits Settlements without an American representative on the ground to push the products and to give the manufacturer advice as to opportunities and as to changes necessary to adapt the goods to the requirements of the people. English and German importers and retail merchants can not be expected to push goods that compete with similar lines from their own countries. Although present sales would not justify direct representation in the Straits Settlements for any individual manufacturer of canned foods, a cooperative selling agency, with a warehouse and supplies, or even a store carrying all lines of purely American canned foods, could be established by the combined efforts of American canners. This important distributing point of the Far East would be a most desirable point at which to make such a start. Until some such work is done American canners need not hope for large sales except in such products as find an unexpected market as canned salmon has done—and even in such cases larger profits and sales could be effected by a man representing all the packers working in unison.

#### DUTCH EAST INDIES.

Dutch East Indies is the name given to Dutch possessions in the Malay Archipelago, including Sumatra, Java, part of Borneo, Celebes, the Molukkas, part of New Guinea, and many minor islands. The total area of these islands is 739,354 square miles and the population 37,717,377.

The island of Java is the only one of this large group that has been fully opened and developed. Sumatra is being gradually exploited and the unfriendly tribes brought under control, but Borneo, New Guinea, and the other dependencies are as yet but little developed, principally at a few points along the seacoast.

Malay is the language adopted by the Dutch as the means of communication, as it is the most easily acquired and is generally known by the natives. There are many dialects in the different islands and even in different sections of the same island, but Malay is a common language used alike by the Chinese, Javanese, and Dutch. It is taught in the schools in the Netherlands, and proficiency in the language is necessary before appointment to a post in the East Indies.

Of the 30,098,000 inhabitants of Java, 293,190 are Chinese and 64,917 Europeans or persons of European descent.

The natives are almost entirely engaged in agricultural pursuits, while the Chinese have practically entirely absorbed the retail business. The principal business cities are Sourabaya, Batavia, and Samarang, and imports are redistributed from these cities to the various ports of the archipelago. The wholesale importing business in canned foods is largely in the hands of two or three Dutch houses. One of these has a main office in Batavia and branch houses in Sourabaya, Samarang, and Bandoeng. This firm stated that the sales of

canned foods were divided in the following proportions: 30 per cent to the Dutch, 60 per cent to the Chinese merchants, and 10 per cent to the natives. The wealth and numbers of Chinese in Java accounts for the large proportion of canned foods purchased by them. This is another indication of what can eventually be accomplished in China itself when the Chinese have become acquainted with canned foods. Kamchatka and Japanese canned salmon has made its appearance in the native stores in the interior of Java, but does not seem to be as much liked as American brands. The imports of canned foods from America are unimportant, as may be gathered from the following table of exports from the United States to the Dutch East Indies:

Articles.	1908	1909	1910	1911	1912	1913	1914
Fish:							
Canned salmon.....	\$11,286	\$16,908	\$15,920	\$17,937	\$24,813	\$31,084	\$22,408
Canned fish other than salmon or shellfish.....	5	130	196	390	178	162	19
Oysters.....			36	36			
Fruit:							
Dried apples.....	387	130	275	848	1,367	1,498	2,126
Apples, green or ripe.....			705				
Dried apricots.....	171	304	372	1,155	1,570	1,424	1,727
Dried peaches.....	662	367	233	9	52	150	329
Prunes.....	277	477	165	267	551	351	317
Raisins.....	656	1,388	117	596	1,025	1,043	801
All other fruits, green, ripe, or dried.....	30,690	29,973	33,858	49,848	78,229	61,082	78,946
Canned fruits.....	19		82	4	198	109	49
All other prepared or preserved fruits.....	10	24	15	12	22	41	182
Honey.....							
Meat:							
Canned beef.....	3,504	4,900	10,892	13,968	15,638	4,800	
Canned pork.....	110	1,015	1,274	4,036	1,288	210	
All other canned meat.....	3,378	2,883	458	3,091	1,232	14,300	
Condensed milk.....			9	480	110	233	342
Canned vegetables.....	66	601	1,228	2,168	1,481	4,261	
All other, including pickles and sauces.....	53	5	430	434	818	311	472

Only two articles are sufficiently well represented to call for comment—canned salmon and fruit. The importance of canned salmon may be attributed to the Chinese in Java. Chinese coolies on the tobacco and coffee plantations of Sumatra are also consumers, although the principal supply for that island probably comes via Singapore.

The canned-fruit imports are a matter of more than passing interest, because of the great liking for canned muscat grapes. As noted in speaking of this trade in China, where the same demand exists, this taste for a canned article for which there is no great demand in the country where it is packed indicates that there may be a possible sale in foreign countries for other American products not canned at home. It illustrates the necessity of studying the tastes of foreign peoples, with a view to preparing goods to suit their demands.

The condensed milk is supplied principally by Europe. It would be natural to expect the Netherlands to control the bulk of this business, but the active work of the Anglo-Swiss Condensed Milk Co. in Java has secured for that company the larger portion of the trade. This company advertises extensively in Malay, and signs are found at all the railway stations reading, when translated, "Young girl's milk is the best." (There is no such word as "milkmaid" in Malay.) One firm stated that the monthly sales of condensed milk in Sourabaya were about 1,500 cases and that in addition to this about 3,000 cases of canned skimmed milk were imported for the natives. In

ducements are offered for exclusive sales and a representative of the company is located in Batavia to assist in the extension of the sales. Such work will have to be undertaken by the American canned-goods manufacturers if they desire to increase sales to any extent. Only such American products as stand alone and can not be obtained elsewhere, as salmon and California fruit, are purchased, and the exploitation of Kamchatka and Japanese salmon may in time decrease even these sales.

While at present the Dutch East Indies do not offer so attractive a field for American canned foods as do some other Far Eastern countries, yet if taken within the zone of a central distributing and sales organization, operating from Singapore and covering not only these islands but Siam, Burma, and the Malay Peninsula, the results would undoubtedly be worth while. Such agencies can not be satisfactorily established by correspondence; and the lack of frequent visits from representatives of American manufacturers offers opportunities to representatives of European firms who do make such visits to obtain some of the trade that American manufacturers should have.

#### CEYLON.

Ceylon, while situated at the extremity of the Indian Peninsula and similar to it in many respects, can be treated independently from the fact that the people and their religion are totally different from those found on the mainland. Ceylon is an English crown colony, with an area of 25,000 square miles and a population, according to the census of 1911, of 4,110,367. The Singhalese are the most important element.

The staple products of the island are agricultural, the principal exports being tea, coffee, cinchona, rubber, cocoa, cinnamon, cardamoms, ebony, and products of the coconut palm. A large source of wealth is also found in precious stones and pearl fisheries.

Colombo, the principal city, is also the center of distribution for imports. A good system of railways and stone roads has been installed by the English Government, and while only one-quarter of the island is under cultivation the wealth of the plantations in that area makes Ceylon one of the most prosperous of the English colonies.

A large proportion of the tea and spice estates are owned and operated by wealthy Singhalese, although a large number of the most successful ones are in the hands of the English. The supplies for these estates are purchased principally through Colombo. All of the distribution houses for canned foods in Colombo are in the hands of the English and the atmosphere is purely English. Four of the large department stores of Colombo carrying canned foods show only a trifling percentage of American canned foods as such. Some American canned foods are found under English labels, having been relabeled in London or Liverpool by the English firms who supply a large trade in English colonies. The only American canned foods found are California fruits and a well-known brand of pickles, and these have been placed by American representatives who have visited Ceylon. English firms regularly send their representatives to this section and keep in close touch with the market's and the needs of the people. The condensed-milk market is practically in the hands of the Anglo-Swiss Condensed Milk Co., and American milk is practi-

cally unknown. The Anglo-Swiss company has its own headquarters on the principal thoroughfare of Colombo, and actively pushes the market. Australian fruits are making headway, but English brands, such as Cross & Blackwell and C. & E. Morton, are so well established that only the superiority of the California fruit enables it to hold its own. The salmon is principally under English labels, although some salmon is placed through an American firm that has had a representative on the ground. The English salmon is principally American salmon relabeled in London and Liverpool.

In addition to the large department stores there are about 16 or 17 native shopkeepers in the "Pettah," the native section of Colombo, but an inspection of their shelves showed only English goods.

The wealth of the Singhalese and the demand on the various estates for certain kinds of canned foods create a fairly good market, but American canned-food manufacturers can obtain only a small proportion of this on account of the strong English influence and natural preference for familiar brands of English goods. The only method by which American firms can increase their sales would be to have representatives visit the country at certain definite periods and to advertise to better familiarize the people with American brands. Ceylon could be very readily canvassed by such a representative, who would also include India in his itinerary.

The customs returns of Ceylon include the total importation of canned foods, amounting to approximately \$300,000, of which amount \$11,679 are credited to the United States. This, however, does not indicate the imports via England, which are credited to Great Britain. There seems to be some feeling against American canned meats on account of the packing-house investigations several years ago, and Australian frozen meat largely holds the market, precluding sales of American tinned meats. The following import statistics for 1913 show the origin of various kinds of canned foods:

Articles and countries of origin.	Values.	Articles and countries of origin.	Values
<b>Beef, tinned:</b>		<b>Fruit, preserved—Continued.</b>	
United Kingdom.....	\$1,985	Tasmania.....	\$2,920
Australasia.....	2,606	Victoria.....	7,999
United States.....	34	South Australia.....	594
Austria.....	39	United States.....	6,226
Butter, tinned:		China.....	523
United Kingdom.....	204	Foreign India.....	1
British India and Burma.....	45,523	Belgium.....	56
Australia.....	7,662	France.....	3,420
France.....	2,879	Germany.....	187
Switzerland.....	6	Netherlands.....	17
<b>Fish, tinned:</b>		Italy.....	499
United Kingdom.....	21,422	Russia in Europe and Asia.....	2
British India and Burma.....	704	Portugal and Spain.....	35
New South Wales.....	6	Switzerland.....	2
Canada.....	17	<b>Milk, preserved:</b>	
United States.....	4,970	United Kingdom.....	1,477
Belgium.....	530	British India and Burma.....	372
France.....	1,280	Straits Settlements.....	218
Germany.....	1,320	Australasia.....	3
Netherlands.....	356	United States.....	160
Italy.....	8	Austria.....	984
Portugal and Spain.....	3,099	France.....	463
<b>Fruit, preserved:</b>		Germany.....	5,777
United Kingdom.....	3,060	Netherlands.....	8,255
British India and Burma.....	4,058	Italy.....	1,825
Straits Settlements.....	15	Switzerland.....	136,966
Hongkong.....	3	<b>Mutton, tinned:</b>	
New South Wales.....	1,019	United Kingdom.....	878
New Zealand.....	45	Australasia.....	1,097

## THE PHILIPPINES.

To the manufacturers of canned foods in America the Philippines should demonstrate what is possible in the sales of their goods in the Far East. Here, of course, there is American influence, and with it the energy that has developed in a short period a growing trade with America.

The imports of American canned foods into the Philippines from 1907 to 1913 are worth studying. The remarkable increase in the sales of canned salmon, when coupled with the data gathered as to its use in the Straits Settlements and Java, indicates a possibility for enormous sales in Far Eastern countries. Proper promotion of sales would be justified throughout this section of the world, and an organized campaign by some cooperative agency of the salmon packers should not be delayed. The increase in sales in the Philippines and in the Straits Settlements points to the possibilities in China.

The increase in imports of canned fruit and more particularly canned vegetables has been more marked in the Philippines than in any other section of the Orient. This increase may be attributed to the American residents in the Philippines, yet according to the census of 1903 there were only 8,200 Americans on the islands, or about as many as there are Caucasians in Japan. The number of Americans, however, has undoubtedly increased in the last 10 years. There were 41,035 Chinese in 1903.

Here, as nowhere else in the Far East, are found American importers displaying that same push and energy, even under a tropical sun, that is so familiar in the United States. Well-kept offices with ample force, warehouses with a full supply of all kinds of canned foods to keep up the stock of the retail grocers, salesmen with automobiles who personally follow up the various grocers to make sales, all savored of American business life contrasted very strongly with methods in other Far Eastern countries. It would be incorrect to say that the methods are absolutely American, for they are modified to suit the customers. It is interesting to watch the different methods used by the salesmen in dealing with the Spanish retail grocer and with the Chinaman, and no newcomer unfamiliar with the types and not a student or observer could make a success with either. The American wholesale firms have trained men for this work and, as the statistics show, are distributing annually more and more American canned goods. This active soliciting, as well as the American spirit pervading the islands, has pushed the sale of canned goods beyond the demand by the Caucasians in the Philippines, and the consumption of such products by the better class of natives will continue to increase annually. Among the articles favored by the natives of Spanish blood are a number of canned vegetables packed in Spain, particularly pimiento and peppers of various sorts. The use of a certain amount of Spanish in advertising and on the labels of foodstuffs intended for natives is important, and this is recognized by the larger American importing houses, who print circulars in Spanish for the benefit of such purchasers.

The American imports of condensed milk are an item which increased largely until 1913. The drop in imports from the United States during the last year may be attributed to the activity of the Anglo-Swiss Condensed Milk Co., which has started a campaign

similar to the ones begun in Japan, China, and Siberia to obtain the markets in the remaining countries of the Far East. They already dominate the others.

This company must pay duty on its products, whereas American condensed milk is admitted free of duty, and yet the active work done by the Anglo-Swiss Co. has not been met by the American manufacturers, who have not felt the necessity of backing up their representatives in the Philippines with funds for advertising. The Anglo-Swiss Co. has branch factories in Australia, whence shipments can be conveniently made. Inducements are given the Chinese, Spanish, and Filipino merchants to sell Anglo-Swiss brands only—10 cents per case rebate to the Chinese, 7 cents to the Spaniards, and 1 cent to the Filipinos at the end of each six months, provided they have sold no other brands. The sales are larger to the Chinese retail merchants than to the Spanish or Filipino, because the Chinese are better retail merchants and are appropriating the retail trade in the Philippines as they have in Singapore, Siam, and the Dutch East Indies. Several of the best grocery stores in Manila are owned by Chinese and the stock is equal to that of stores of greater pretension in the United States. The success and growth of one or two of these Chinese grocery stores handling practically nothing but American canned goods is sufficient proof of what can be done in this line.

Of course, back of this success is the fact that the retail merchant has the large stock of the wholesale American importers from which to replenish his own stock without waiting indefinitely for shipments and bothering with correspondence with Americans who do not fully understand him or know his standing. He is not allowed to depend upon his own initiative in placing orders, but is followed up by the American salesman of the wholesaler in true American fashion.

The organization of the larger American importing firms in Manila is just the kind that should be inaugurated by the cooperative efforts of the American canning interests in China and other far eastern points. The success in increasing the sales of American canned foods through a strictly American organization in the Philippines bears out the statement that American methods will succeed when vigorously and earnestly attempted. That business in American canned foods in China could follow the pace set by the American firms selling oil, tobacco, and sewing machines, if undertaken by an American cooperative selling organization, seems clearly enough demonstrated by the progress made by American importers using such an organization in the Philippines.

The exports of American canned foods to the Philippines are shown in the following table:

	1908	1909	1910	1911	1912	1913	1914
<b>Fish:</b>							
Salmon.....	\$84,533	\$74,792	\$396,604	\$225,884	\$422,001	\$590,128	\$266,369
Fish other than salmon or shellfish.....	13,525	14,457	11,946	11,055	20,083	8,766	2,181
Oysters.....	9,184	10,620	11,188	9,100	12,700	6,365	4,206
Shellfish, all other.....	2,767	3,646	8,383	9,250	10,432	4,131	1,759
All other fish and fish products.....	242	1,137	1,612	4,487	1,421	393	107
Flavoring extracts and fruit juices.....	3,793	6,204	4,529	12,615	21,692	11,328	8,583
<b>Fruit:</b>							
Dried apples.....	377	469	1,232	2,046	5,754	1,267	1,769
Apples, green or ripe.....	3,494	2,461	6,711	14,064	16,591	34,399	56,453
Dried apricots.....	135	115	939	573	445	343	1,821
Dried peaches.....	5	166	506	617	3,280	396	323

	1908.	1909.	1910.	1911.	1912.	1913.	1914
<b>Fruit—Continued.</b>							
Prunes.....	\$104	\$846	\$2,420	\$3,032	\$7,825	\$2,315	\$4,722
Raisins.....	429	1,630	6,908	12,942	23,113	29,504	27,822
All other fruits, green, ripe or dried.....	12,149	15,545	10,252	12,314	16,094	5,751	3,925
Canned fruits.....	31,766	56,378	63,207	57,208	106,250	77,161	75,383
All other preserved or prepared fruit.....							
Honey.....	3,993	6,516	6,183	5,759	10,852	5,905	8,053
Meat:							
Canned beef.....	2,012	2,026	2,785	2,938	3,519	1,711	2,495
Canned pork.....	58,385	40,202	67,710	24,340	174,476	28,922	8,957
All other canned meat.....	9,978	16,000	10,464	7,771	8,275	145	940
Condensed milk.....	26,830	49,894	116,824	77,757	138,769	127,473	104,873
Sirup.....	157,602	124,790	163,785	235,681	218,306	103,924	157,408
Canned vegetables.....	6,024	10,135	6,408	16,319	17,635	7,587	8,256
All other, including pickles and sauces.....	64,763	116,930	93,121	116,574	194,942	103,492	114,312
	31,542	40,328	38,068	48,465	76,284	46,147	59,800

#### NOTES ON THE TRADE IN EGYPT.

Statistics for the imports of canned foods into Egypt from the United States do not give accurate information as to the actual importation of American canned goods, and a careful study of the stock of goods in the various retail stores in Alexandria, Cairo, and Port Said, the three principal cities from which such goods are distributed, revealed a limited supply of American goods, to judge from the labels.

There are three classes of trade in Egypt: First, the trade of the large grocery establishments catering to the high-class and tourist trade; second, those establishments in Alexandria and Port Said supplying the ships requiring provisions at those points; third, the native stores supplying the non-Caucasian population with canned foods. The business carried on by the first class of retail stores is large and increasing because of the increasing number of tourists and winter residents at Cairo. These stores supply the numerous boats making the trip up the Nile and the hotels catering to the tourist trade. The lack of American goods in these stores is very noticeable, especially in view of the large number of American tourists on the Nile steamers. The firm supplying Cook's tourist boats stated that they had only one American canned food—aspargis. Only three American manufacturers were represented in the stock carried by the largest grocery establishment in Cairo, which supplies the residents and hotels of that city, and these stocks were not displayed conspicuously on the shelves of this establishment nor given prominence in the price list. Orders for American goods are given to the London branches of those manufacturers.

The same comments apply largely to the firms of Alexandria and Port Said supplying ships. The third class of stores in the native quarters of Cairo, Alexandria, and Port Said show absolutely no stock of American goods with American labels, but the cheaper qualities of California fruit and American salmon are found in nearly all of these stores under English labels. Information gathered in Liverpool and London, as well as in California and Seattle, demonstrated clearly that quantities of American goods are shipped to London and Liverpool unlabeled, at which points labels of English firms and English brands are placed upon them, and these goods are often found in the native stores of Egypt.

The trade in California fruits among the natives seems to be large, but is practically in the hands of the English firms purchasing them

from America. The trade in canned vegetables is largely in the hands of the Italians and Greeks, there being numbers of each nationality in Egypt, and fruits from these countries are also competing on account of the low prices, with the American goods entering Egypt by London and Liverpool. Large quantities of Singapore pineapple are consumed in Egypt, but practically no Hawaiian pineapple has found its way into this market.

The American firms who are trying to obtain a trade in Egypt have endeavored to place their goods upon the market by means of agents in Alexandria, the principal business center of the country, but results have not always been satisfactory, and in several cases severe losses have been incurred.

The system adopted by American canned-food manufacturers in supplying the Egyptian market with canned foods through Liverpool and London, under English labels, does not promise any permanent hold on this market. An analysis of the trade in unlabeled goods sent to England shows that the English distributors of London and Liverpool have many other markets similar to Egypt to which American goods eventually find their way as English brands. Should Australia or some other country ever be able to compete with the California fruit there might be serious inroads into what Americans now consider their English trade. If American canners could combine in a central distributing plant in London or Liverpool, with traveling salesmen visiting European and other countries, like Egypt, within easy reach of England, markets could be gradually established for American goods. Constant work with the better class of retail merchants would then result in a better sale of the best quality of American canned foods. At first glance this may not seem justified, but if American canned foods are to gain any permanent hold on these markets, such tactics will be necessary. There is no reason why the Egyptian market should not absorb much greater quantities of American canned goods.

The cheaper grades of fruits and other canned foods find a good market in Egypt among the native stores, but when these stores require small quantities of goods it is absolutely impossible to purchase direct from America. A number of instances were noted where retailers desired to purchase mixed shipments of goods, but the impossibility of securing such shipments from America, not to mention the delay incurred in receiving such consignments, drives all of these orders to England. Such mixed shipments sent from England are more likely to contain a larger proportion of purely English goods than would be the case if an American distributing house located in London could make up such shipments for European and Egyptian markets.

The following statement of imports of canned vegetables into Egypt in 1913 shows the sources of supply:

Countries of origin.	Value.	Countries of origin.	Value.
England.....	\$43,7.6	Greece.....	\$1,083
British Mediterranean possessions.....	1,448	Netherlands.....	568
British Indies.....	499	Italy.....	79,776
British Australasia.....	376	Russia.....	425
Germany.....	7,029	Sweden.....	277
Austria-Hungary.....	2,135	Switzerland.....	3,732
Belgium.....	8,336	Libia.....	94
Denmark.....	49	Turkey.....	12,453
Spain.....	103	Total.....	205,712
United States.....	2,714		
France.....	42,86		

The following table shows the prices of some typical American, Italian, and English canned goods:

Articles.	Cost prices in Cairo.	Retail prices.	Articles.	Cost prices in Cairo.	Retail prices.
<b>AMERICAN PRODUCTS.</b>					
Lunch tongue:			Red cherries:		
1-pound tin.....	\$0.32	.35	2½-pound tin.....	\$0.22	.30
½-pound tin.....	.18	.22	1½-pound tin.....	.12	.15
Corned beef:			Peaches:		
1-pound tin.....	.31	.35	2½-pound tin.....	.22	.30
½-pound tin.....	.18	.20	1½-pound tin.....	.12	.15
Brisket of beef, 1-pound tin.....	.18	.20	Pears:		
Sliced Star bacon, 1-pound glass.....	.28	.35	2½-pound tin.....	.22	.30
Quaker oats:			1½-pound tin.....	.12	.15
2-pound tin.....	.16	.20	Apricots:		
2-pound package.....	.13	.17	2½-pound tin.....	.22	.30
1-pound package.....	.07	.10	1½-pound tin.....	.12	.15
Grape nuts, 1-pound package.....	.13	.17	Mixed fruits:		
Peaches:			2½-pound tin.....	.23	.30
Crown brand, 2½-pound tin.....	.26	.35	1½-pound tin.....	.13	.15
Eldorado, 2½-pound tin.....	.30	.40	Mirabel plums, 1½-pound tin.....	.12	.15
Stag, 3-pound tin.....	.37	.50	Figs, 1½-pound tin.....	.11	.15
Pears:			Greengages, 1½-pound tin.....	.11	.15
Crown brand, 2½-pound tin.....	.26	.35	Tomato peels, 2½-pound tin.....	.12	.15
Eldorado, 2½-pound tin.....	.30	.40	Ham and tongue, 1-pound glass.....	.36	.47
Stag, 3-pound tin.....	.37	.50	Brawn, 1-pound glass.....	.25	.32
Apricots:			Spiced beef, 1-pound tin.....	.37	.47
Eldorado, 2½-pound tin.....	.30	.40	Corned beef, 1-pound tin.....	.37	.47
Stag, 3-pound tin.....	.37	.50	Lunch tongue, 1-pound glass.....	.37	.47
Tomato peels, 2½-pound tin.....	.12	.17	Pressd beef, 1-pound tin.....	.37	.47

#### CONCLUSIONS.

In discussing the best methods of increasing American canned-food exports it is necessary to note the general conditions surrounding the production of canned foods in the United States, as well as the present methods of sale and distribution of the products.

A glance through the Canner's Directory, compiled by the National Canners' Association in 1913, shows that this vast business (the value of which is given by the United States census of 1910 as \$157,101,000) is divided among 3,168 factories. A large percentage of these factories confine their activities to the canning of one or two products. These are located near the sources of supply and have a limited season during which the product is packed. Such firms usually have limited capital and small individual output, varying in quantity from year to year, according to the season. In many cases they are operated by the growers, as in the case of the tomato factories of Maryland, Delaware, and New Jersey. Such factories and manufacturers have no selling organization, and to take care of this feature of the business local canned-goods brokerage firms have come into existence. Through them supplies are bought and the finished product sold on a commission basis, and in some cases financing in the earlier stages of the development of the business is accomplished by the same firms.

The more successful and the older factories are those larger organizations, made up often by the combination of a number of smaller

factories under one management, with sufficient capital for future needs. These larger factories do not confine their output to a few products, but endeavor to pack as large a variety of articles as possible, erecting branch canning houses at the points of production. Such companies are occupied in canning for a much greater part of the year than the single-product factories, excepting, of course, such factories as the condensed-milk concerns, which operate throughout the year. These large companies have learned the necessity of organization and advertising.

Too much stress can not be laid on the importance of the advertising of canned foods. Advertising and organization are the two vital features necessary to build up a real export trade in canned goods, and advertising managed by foreign agents can not be so efficient as that by an organization fully familiar with the goods to be sold. It is necessary to study the various nationalities and the means of reaching them through advertising suited to their peculiarities and products suited to their tastes, and this can be best accomplished by those most interested. The larger manufacturers have found selling organizations and advertising absolutely necessary at home, and such concerns are practically the only ones that have been in any way able to enter foreign fields successfully and permanently. The smaller packer has shared in the benefits of the advertising and extension of business into foreign lands by the larger concerns.

A realization of the benefits of cooperation has resulted in the organization of the National Canners' Association, a sort of clearing house for the many canning establishments in the country that has brought the industry to a standard of excellence impossible of attainment by any other means. The cooperative work of this association in furnishing information as to the true economic importance of the preservation of foods by sterilization by intense heat only would alone justify its existence, but the activities of the association have been further extended to maintaining among its members a high standard of quality, and to working hand in hand with the United States officials of the Bureau of Chemistry in correcting abuses. The association has also established a research laboratory in order to further improve and advance the industry and to help any of its members individually to overcome technical problems arising at the factory. The investigation of attacks upon the good name of the industry, especially in the line of reported cases of ptomaine poisoning from eating canned foods, has been of late years another phase of the interest taken by this organization of canners. Efforts have also been made to standardize laws passed by the different States. Such cooperation extended to foreign lands in the form of an organization for selling and advertising canned goods would insure the proper exploitation of such products abroad.

In some countries an educational campaign is the only speedy means of determining which products will become ready and permanent sellers. In others the problem will be to meet competition from the manufacturers of other countries. In some cases success will depend on adapting the goods to suit the country to which they are to be sold. This may be a matter of using labels that the native can

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read, it may mean decreasing the size of the can to meet the requirements of economical peoples, or it may involve changes in the goods themselves to suit the native taste. In most cases it will be necessary to get away from the idea that anything can be crammed down the throats of prospective consumers whether they like it or not, and the other equally fallacious idea, "If they don't like it they need not buy it." The German system of finding out what the other fellow wants and then making it for him has been an important factor in building up Germany's great export trade.

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A number of photographs of Chinese canneries and of typical Chinese advertisements are in the possession of the Bureau of Foreign and Domestic Commerce and may be examined by those interested.



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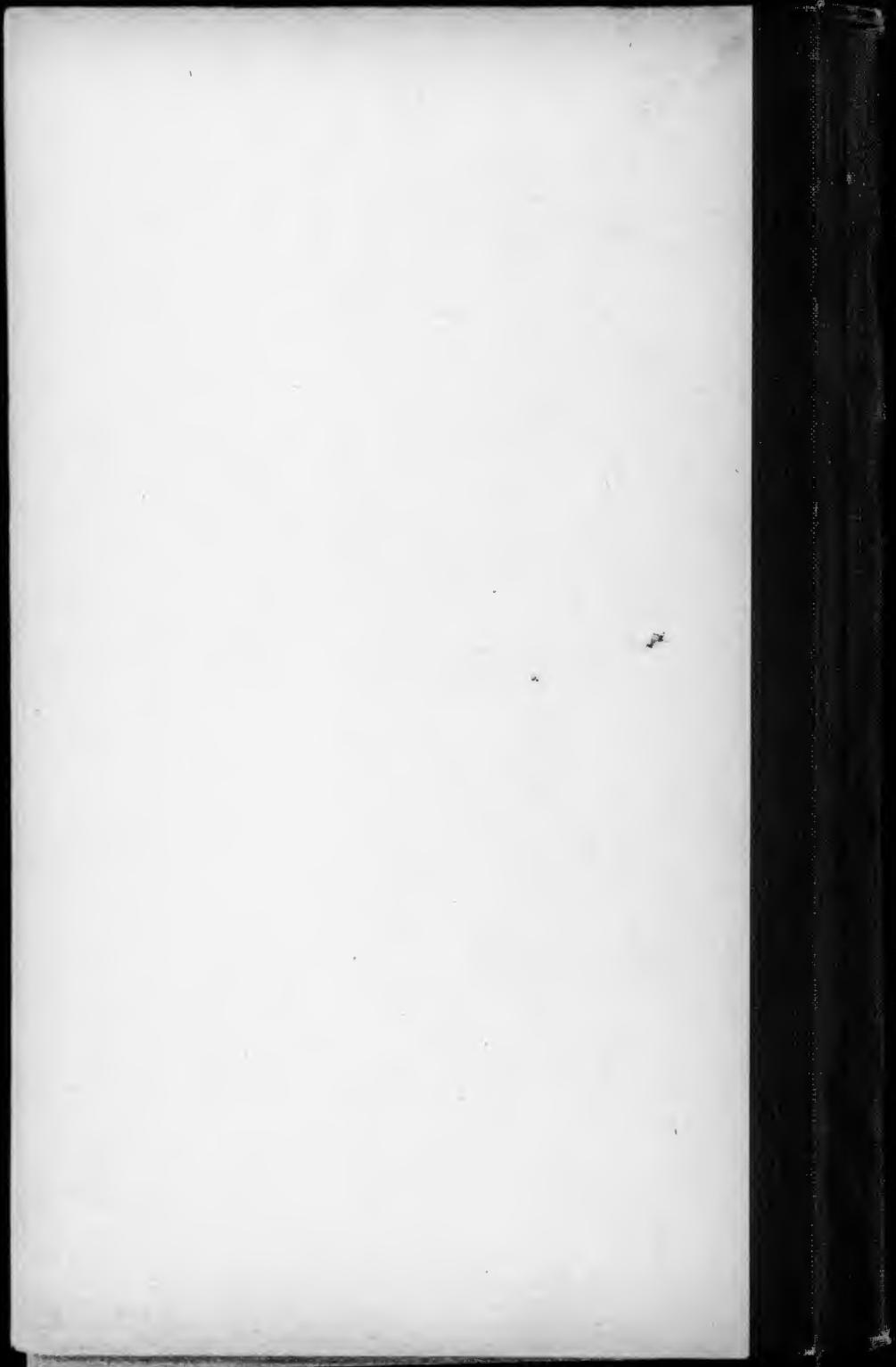
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